

Service Manual

ViewSonic VP2000s

Model No. VLCDS26064-4W

20" Color TFT LCD Display

(VP2000s_SM_892 Rev. 1a July 2004)

ViewSonic® 381 Brea Canyon Road, Walnut, California 91789 USA - (800) 888-8583

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Revision History

Revision	SM Editing Date	Documents Number		Description of Changes	Editor
		DCN Number	ECR Number		
1a	05/07/04	4530		Initial Release	A. Lu

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1. Precautions and Safety Notices

Prior to using this manual, please ensure that you have carefully followed all the procedures outlined in the user manual for this product.

- Read all of these instructions.
- Save these instructions for later use.
- Follow all warnings and instructions marked on the product.
- Do not use this product near water.
- This display should be installed on a solid horizontal base.
- When cleaning, use only a neutral detergent cleaner with a soft damp cloth. Do not spray with liquid or aerosol cleaners.
- Do not expose this display to direct sunlight or heat. Hot air may cause damage to the cabinet and other parts.
- Adequate ventilation must be maintained to ensure reliable and continued operation and to protect the display from overheating. Do not block ventilation slots and openings with objects or install the display in a place where ventilation may be hindered.
- Do not install this display near a motor or transformer where strong magnetism is generated. Images on the display will become distorted and the color irregular.
- Do not allow metal pieces or objects of any kind fall into the display from ventilation holes.

Slots and openings in the cabinet and the back or bottom are provided for ventilation, to ensure reliable operation of the product and to protect it from overheating, those openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.

2. Specification

2.1 Electrical Specification

a. General specification:		
LCD panel suppliers:	LG: LM201U03-A3./LM201U04-A3	
LCD panel specification:	a. Panel size:	20.1-inch (viewable).
	b. Driver element:	a - Si TFT active matrix.
	c. Effective display area:	408.0 (H) X 306.0 (V) mm.
	d. Pixel pitch:	0.255 (H) X 0.255 (V) mm.
	e. Max. resolution:	UXGA (1600X1200 pixels).
	f. Display color:	16.7M colors (R, G, B 8-bit data).
	g. Response time (ms)(typical):	25 ms => LM201U03
		16 ms => LM201U04
	h. Color Gamut:	60% => LM201U03
		72% => LM201U04
	i. Color filter arrangement:	R / G / B vertical stripe.
	j. Black light:	Edge – light type with 6CCFLs.
	k. Contrast ratio:	350:1 => LM201U03
		400:1 => LM201U04
Input signals:	l. Luminance:	250cd/m ² (Typical).
	m. Luminance variation:	1.54 (MAX.).
	n. Viewing angle (CR >10):	Horizontal: 176°, Vertical: 176°.
	a. Analog R / G / B (0.7Vp-p/75 ohm) Positive.	
	b. Digital R / G / B DVI rev. 1.0 (TMDS single link)	
Input connector:	c. H & V separate Sync: TTL level; Polarity: Positive or Negative.	
	d. H & V composite Sync: TTL level; Polarity: Positive or Negative.	
	e. SOG (Sync level 0.3Vp-p).	
	a. Analog D-sub 15pin x 1.	
	b. Digital DVI-I 29 pin x 1. (Analog + Digital)	
Display data channel:	DDC2B. (Appendix B)	
Signal frequency range:	a. Horizontal:	
	a-1. Analog: 30KHz ~ 95KHz.	
	a-2. Digital: 30KHz ~ 92KHz.	
	b. Vertical: 50Hz ~ 85* ¹ Hz.	
	Note: * ¹ The maximum vertical refresh rate of 1600x1200 as below: Analog input: 75 Hz. Digital input: 60 Hz.	
Resolution:	c. Pixel clock:	
	c-1. Analog: 205MHz.	
	c-2. Digital: 165MHz.	
Power supply:	d. Non-interlaced.	
	Resolution:	1600x1200. (UXGA)
	Power supply:	AC Input Range:
Inrush current	Less then 50Ap.	AC 90 to 264V, 50/60Hz ± 3Hz, 1.5A.
	Less then 100Ap.	For 115V _{AC} .
		For 230V _{AC} .
Power Consumption:	Less then 73W.	On mode.
	Less then 5W.	Active off mode.
	Less then 5W.	DC power off.

b. Physical specification.		
Overall dimension:	a. Height:	480.55mm.
	b. Width:	448.00mm.
	c. Depth:	266.65mm.
Weight:	a. Net weight:	8.5kg.
	b. Gross weight:	11.2kg.
Mechanical adjustment:	a. Tilt:	+25° ~ -5°.
	b. Swivel:	± 45°.
	c. Height adjust:	110mm.
	d. Pivot:	90°.
Packaging:	a. Carton dimension:	a. Height: 494mm.
		b. Width: 345mm.
		c. Depth: 560mm.
Accessories:	Power cable 1.8m. User guide (English). CD ROM. Warranty card. HD15 - HD15 cable. DVI (D) – DVI (D) cable. Portrait Software CD	
c. Regulatory & Standard certification.		
Regulatory standards	UL, cUL, FCC-B, CB, CE, ENERGY, NOM, TUV/GS, TUV-ERGO (covers ISO13406-2 & MPRII), TCO’ 03 (for VP201s), TCO99 (for VP201b), NEMKO, SEMKO, DEMKO, FIMKO, GOST-R, PCBC, VCCI, BSMI, CCC, (PSB), (C-TICK)	

2.1.1 Picture size & position.

a. Picture size.

Input analog timing 1 ~ 25mode & DVI timing 1 ~ 22mode:
(Appendix A)

H-size: 408mm ± 1mm.

V-size: 306mm ± 1mm. (Extra 640x350)

b. Screen center.

b-1. 1600x1200: H ± 1mm, V ± 1mm.

b-2. Others mode: H ± 1.5mm, V ± 1mm.

c. Picture position (refer to FIG.2).

H-position: | g3-g4 | 1.5mm.

V-position: | g1-g2 | 1.5mm.

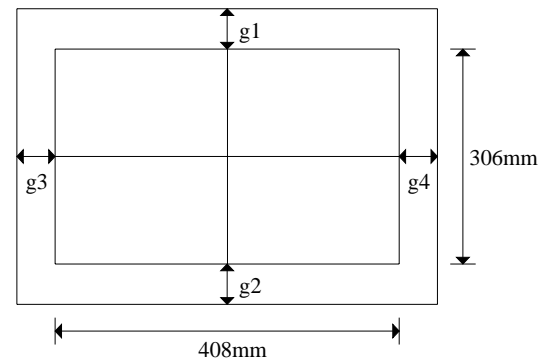


FIG. 2

2.1.2 Luminance test.

Input 1600x1200 / 60Hz & full white pattern at 100IRE, adjust brightness 100%, contrast 70%.

Color temperature	x, y value	Y (Luminance)	
		Analog	DVI
9300° K	x=0.283 , y=0.298 CCT(max) = 10250° K, CCT(min) = 8500° K	> 140 cd/m ²	> 140 cd/m ²
6500° K	x=0.313 , y=0.329 CCT(max) = 6950° K, CCT(min) = 6100° K	> 180 cd/m ²	> 180 cd/m ²
5400° K	x=0.335 , y=0.350 CCT(max) = 5915° K, CCT(min) = 4935° K	> 180 cd/m ²	> 180 cd/m ²
5000° K	x=0.346 , y=0.359 CCT(max) = 53500° K, CCT(min) = 4700° K	> 180 cd/m ²	> 180 cd/m ²

2.2. Adjustment control.

2.2.1 User control.

- Power switch.
- Function key.
 - “1” : Function select button.
 - “▼” : Adjustment button.
 - “▲” : Adjustment button.
 - “2” : Function select button.

2.2.2 OSD function.

Auto Image Adjust*²

Contrast/Brightness:

Contrast, Brightness.

Input Select:

D-Sub, DVI-A, DVI-D.

Color Adjust:

9300K, 6500K (default), 5400, 5000, User Color (R, G, B).

Information:

Resolution, Horizontal Frequency, Vertical Frequency, Model Number, Serial Number, Web Site.

Manual Image Adjust:

H. / V. Position*² (H. Position, V. Position), H. Size*², Fine Tune*², Sharpness*³, Scaling*³ (Fill Screen, Fill Aspect Ratio*⁴, 1:1).

Setup Menu:

Language:

English, French, German, Spanish, Italian, Finnish, Japanese, Traditional Chinese, Simplified Chinese.

Resolution Notice:

Enable, Disable.

Input Priority:

D-Sub, DVI-A, DVI-D, Auto Search.

OSD Position:

H. Position, V. Position.

OSD Timeout:

5SEC, 15SEC, 30SEC, 60SEC

OSD Background:

On, Off.

Memory Recall

Note:

*² These functions are not available in Digital mode; the setting is shaded and can't be selected.

When auto tuning, the image should not be blanking.

*³ These functions are not available in 1600x1200 mode, the setting is shaded and can't be selected.

*⁴ When the input signal is 4:3, the “Fill Aspect ratio” function is the size same as “Fill Screen”.

2.3 Factory preset.

2.3.1 Special key (Hot key): Hold the following keys while powering on:

[1].	Main Menu.
[2].	Select next input. (Sequence: D-SUB → DVI-A → DVI-D)
[UP] or [DOWN] arrow.	To immediately activate Contrast menu. It should be change to Brightness OSD by push button [2].
[UP] + [DOWN] arrows.	Recall Contrast or Brightness while in the Contrast or Brightness adjustment, or recall both of Contrast and Brightness when the OSD is not open.
[1] + [2].	Toggle 720x400 and 640x400 mode when input 720x400 or 640x400 mode.
[1] + [UP] + [DOWN].	White Balance. (keep press 5 seconds) (only used 1024x768/75Hz, 16 Grays)
[1] + [DOWN].	Power Lock / Power Unlock. (keep press 10 seconds)
[1] + [UP].	OSD Lock / OSD Unlock (keep press 10 seconds)
DC-Power + [2] + [UP].	Copy EDID to E ² PROM.
DC-Power + [1].	Factory mode. (Burn in mode on)
DC-Power + [2] + [DOWN].	Burn in mode on.
DC-Power + [UP] + [DOWN].	Burn in mode off.
DC-Power + [2].	All mode recall.
AC-Power on.	Enter ISP mode.

2.3.2 All mode recall setting:

Contrast	70%.
Brightness	100%.
Color Temperature	6500K.
Scaling	Full Screen.
Sharpness	0.
Input Priority	Auto Search.
OSD H. Position	50%.
OSD V. Position	50%.
OSD Time Out	15 Sec
OSD Background	On
Resolution Notice	Enabled
720x400/640x400	720x400
User color.	50%.
Language.	English.
Clear burn in mode.	
Clear user mode table.	

2.3.3 Factory shipment setting:

Main power switch: On.

AC power button: Off.

Others setting same as “All mode recall” setting.

2.4. Environmental conditions.

2.4.1 Temperature and humidity at operation : 0°C ~ 40°C.
20% ~ 90% RH (Non condensing).

2.4.2 Temperature and humidity at storage : -20°C ~ 60°C.
5 ~ 90% RH (Non condensing).

2.4.3 Vibration test (packaged) :
Vibration Frequency : 5 ~ 250Hz.
Acceleration : 1G.
Sweep time : 1 oct. / min.
Test time : 60 min per axis, total 3 axis.

2.4.4 Drop test (packaged) : 76.2cm height.
1 corner, 3 edges, 6 faces.

2.4.5 Altitude : Operating : 0 ~ 3000 feet.
Non-operating : 0 ~ 12000 feet.

Appendix A: Timing of inputs signals / nominal input level spec / Timing.

Timing of input signals, Input level specification.

A. Input signal:

- a. Analog R / G / B (0.7Vp-p/75 ohm) Positive.
- b. Digital R / G / B DVI rev. 1.0 (TMDS single link)
- c. H & V separate Sync: TTL level; Polarity: Positive or Negative.
- d. H & V composite Sync: TTL level; Polarity: Positive or Negative.

B. Input signal connector:

a. Analog video input:

Pin	Pin assignment	Pin	Pin assignment
1	Red video	9	+5V for DDC
2	Green video	10	GND
3	Blue video	11	GND
4	GND	12	DDC SDA
5	GND	13	H SYNC
6	Red video return	14	V SYNC
7	Green video return	15	DDC SCL
8	Blue video return		

Pin5: For cable connection detect.

b. Digital video input:

Pin	Pin assignment	Pin	Pin assignment	Pin	Pin assignment
1	TMDS data 2-	9	TMDS data 1-	17	TMDS data 0-
2	TMDS data 2+	10	TMDS data 1+	18	TMDS data 0+
3	TMDS data 2 shield	11	TMDS data 1 shield	19	TMDS data 0 shield
4	NC	12	NC	20	NC
5	NC	13	NC	21	NC
6	DDC clock	14	+5V power	22	TMDS clock shield
7	DDC data	15	GND	23	TMDS clock +
8	Analog V-SYNC	16	Hot Plug Detect	24	TMDS clock -
C1	Analog R	C2	Analog G	C3	Analog B
C4	Analog H-SYNC	C5	Analog Ground		

Pin15: For cable connection detect.

C. Analog timing chart.

Mode No.	1	2	3	4	5	6	7	8	9	10
Mode Name	TEXT 640 x 350	VESA 640 x 480	MAC 640 x 480	VESA 640 x 480	VESA 640 x 480	VESA 640 x 480	TEXT 720 x 400	VESA 800 x 600	VESA 800 x 600	VESA 800 x 600
Horizontal Freq.	31.468	31.469	35.000	37.861	37.500	43.269	31.469	35.156	37.879	48.077
Video clock Freq.	25.175	25.175	30.240	31.500	31.500	36.000	28.322	36.000	40.000	50.000
Sync. Polarity	+	-	-	-	-	-	-	+	+	+
H. total (Dots)	800	800	864	832	840	832	900	1024	1056	1040
H. sync. (Dots)	96	96	64	40	64	56	108	72	128	120
H. back porch (Dots)	48	48	96	128	120	80	54	128	88	64
H. active (Dots)	640	640	640	640	640	640	720	800	800	800
H. front porch (Dots)	16	16	64	24	16	56	18	24	40	56
Vertical Freq. (Hz)	70.087	59.940	66.667	72.809	75.000	85.008	70.087	56.250	60.317	72.188
Sync. Polarity	-	-	-	-	-	-	+	+	+	+
V. total (Lines)	449	525	525	520	500	509	449	625	628	666
V. sync. (Lines)	2	2	3	3	3	3	2	2	4	6
V. back porch (Lines)	60	33	39	28	16	25	35	22	23	23
V. active (Lines)	350	480	480	480	480	480	400	600	600	600
V. front porch (Lines)	37	10	3	9	1	1	12	1	1	37

Mode No.	11	12	13	14	15	16	17	18	19	20
Mode Name	VESA 800 x 600	VESA 800 x 600	MAC 832 x 624	VESA 1024 x 768	VESA 1024 x 768	XGA 1024 x 768	VESA 1024 x 768	VESA 1024 x 768	VESA 1280 x 1024	VESA 1280 x 1024
Horizontal Freq. (KHz)	46.875	53.674	49.727	48.363	56.476	58.099	60.023	68.677	63.981	79.976
Video clock Freq.	49.500	56.250	57.285	65.000	75.000	78.084	78.750	94.500	108.00	135.00
Sync. Polarity	+	+	-	-	-	-	+	+	+	+
H. total (Dots)	1056	1048	1152	1344	1328	1344	1312	1376	1688	1688
H. sync. (Dots)	80	64	64	136	136	136	96	96	112	144
H. back porch (Dots)	160	152	224	160	144	160	176	208	248	248
H. active (Dots)	800	800	832	1024	1024	1024	1024	1024	1280	1280
H. front porch (Dots)	16	32	32	24	24	24	16	48	48	16
Vertical Freq. (Hz)	75.000	85.061	74.553	60.004	70.069	72.082	75.029	84.997	60.020	75.025
Sync. Polarity	+	+	-	-	-	-	+	+	+	+
V. total (Lines)	625	631	667	807	806	806	800	808	1066	1066
V. sync. (Lines)	3	3	3	6	6	6	3	3	3	3
V. back porch (Lines)	21	27	37	29	29	29	28	38	38	38
V. active (Lines)	600	600	624	768	768	768	768	768	1024	1024
V. front porch (Lines)	1	1	3	3	3	3	1	1	1	1

Mode No.	21	22	23	24	25	26	27	28	29	30
Mode Name	VESA 1280 x 1024	HDTV 1280 x 720	VESA 1600 x 1200	VESA 1600 x 1200	VESA 1600 x 1200					
Horizontal Freq. (KHz)	91.146	45.000	75.000	87.500	93.750					
Video clock Freq.	157.50	74.250	162.00	189.00	202.500					
Sync. Polarity	+	-	+	+	+					
H. total (Dots)	1728	1650	2160	2160	2160					
H. sync. (Dots)	160	40	192	192	192					
H. back porch (Dots)	224	270	304	304	304					
H. active (Dots)	1280	1280	1600	1600	1600					
H. front porch (Dots)	64	60	64	64	64					
Vertical Freq. (Hz)	85.024	60.000	60.000	70.000	75.000					
Sync. Polarity	+	-	+	+	+					
V. total (Lines)	1072	750	1250	1250	1250					
V. sync. (Lines)	3	5	3	3	3					
V. back porch (Lines)	44	20	46	46	46					
V. active (Lines)	1024	720	1200	1200	1200					
V. front porch (Lines)	1	5	1	1	1					

D. Digital timing chart.

Mode No.	1	2	3	4	5	6	7	8	9	10
Mode Name	TEXT 640 x 350	VGA 640 x 400	VESA 640 x 480	VESA 640 x 480	VESA 640 x 480	VESA 640 x 480	TEXT 720 x 400	VESA 800 x 600	VESA 800 x 600	VESA 800 x 600
Horizontal Freq.	31.468	31.468	31.469	37.861	37.500	43.269	31.469	35.156	37.879	48.077
Video clock Freq.	25.175	25.175	25.175	31.500	31.500	36.000	28.322	36.000	40.000	50.000
Sync. Polarity	+	-	-	-	-	-	-	+	+	+
H. total (Dots)	800	800	800	832	840	832	900	1024	1056	1040
H. sync. (Dots)	96	96	96	40	64	56	108	72	128	120
H. back porch (Dots)	48	48	48	128	120	80	54	128	88	64
H. active (Dots)	640	640	640	640	640	640	720	800	800	800
H. front porch (Dots)	16	16	16	24	16	56	18	24	40	56
Vertical Freq. (Hz)	70.087	70.087	59.940	72.809	75.000	85.008	70.087	56.250	60.317	72.188
Sync. Polarity	-	+	-	-	-	-	+	+	+	+
V. total (Lines)	449	449	525	520	500	509	449	625	628	666
V. sync. (Lines)	2	2	2	3	3	3	2	2	4	6
V. back porch (Lines)	60	35	33	28	16	25	35	22	23	23
V. active (Lines)	350	400	480	480	480	480	400	600	600	600
V. front porch (Lines)	37	12	10	9	1	1	12	1	1	37

Mode No.	11	12	13	14	15	16	17	18	19	20
Mode Name	VESA 800 x 600	VESA 800 x 600	VESA 1024 x 768	VESA 1024 x 768	XGA 1024 x 768	VESA 1024 x 768	VESA 1024 x 768	VESA 1280 x 1024	VESA 1280 x 1024	VESA 1280 x 1024
Horizontal Freq. (KHz)	46.875	53.674	48.363	56.476	58.099	60.023	68.677	63.981	79.976	91.146
Video clock Freq.	49.500	56.250	65.000	75.000	78.084	78.750	94.500	108.00	135.00	157.50
Sync. Polarity	+	+	-	-	-	+	+	+	+	+
H. total (Dots)	1056	1048	1344	1328	1344	1312	1376	1688	1688	1728
H. sync. (Dots)	80	64	136	136	136	96	96	112	144	160
H. back porch (Dots)	160	152	160	144	160	176	208	248	248	224
H. active (Dots)	800	800	1024	1024	1024	1024	1024	1280	1280	1280
H. front porch (Dots)	16	32	24	24	24	16	48	48	16	64
Vertical Freq. (Hz)	75.000	85.061	60.004	70.069	72.082	75.029	84.997	60.020	75.025	85.024
Sync. Polarity	+	+	-	-	-	+	+	+	+	+
V. total (Lines)	625	631	807	806	806	800	808	1066	1066	1072
V. sync. (Lines)	3	3	6	6	6	3	3	3	3	3
V. back porch (Lines)	21	27	29	29	29	28	38	38	38	44
V. active (Lines)	600	600	768	768	768	768	768	1024	1024	1024
V. front porch (Lines)	1	1	3	3	3	1	1	1	1	1

Mode No.	21	22	23	24	25	26	27	28	29	30
Mode Name	HDTV 1280 x 720	VESA 1600 x 1200								
Horizontal Freq. (KHz)	45.000	75.000								
Video clock Freq.	74.250	162.00								
Sync. Polarity	-	+								
H. total (Dots)	1650	2160								
H. sync. (Dots)	40	192								
H. back porch (Dots)	270	304								
H. active (Dots)	1280	1600								
H. front porch (Dots)	60	64								
Vertical Freq. (Hz)	60.000	60.000								
Sync. Polarity	-	+								
V. total (Lines)	750	1250								
V. sync. (Lines)	5	3								
V. back porch (Lines)	20	46								
V. active (Lines)	720	1200								
V. front porch (Lines)	5	1								

E. 128 bytes of EDID code for VP2000s analog

	0	1	2	3	4	5	6	7	8	9
0	00	FF	FF	FF	FF	FF	FF	00	5A	63
10	1A	23	01	01	01	01	01	0E	01	03
20	0E	29	1F	78	2A	60	E5	A3	57	4B
30	9C	25	11	50	54	BF	EF	80	A9	40
40	A9	4F	81	80	81	40	71	4F	61	59
50	45	59	31	59	48	3F	40	30	62	B0
60	32	40	40	C0	13	00	98	32	11	00
70	00	1E	00	00	00	FF	00	50	39	34
80	30	34	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	32	55	1E	5F	15
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	50	32	30	30	30	73
120	0A	20	20	20	20	20	00	26		

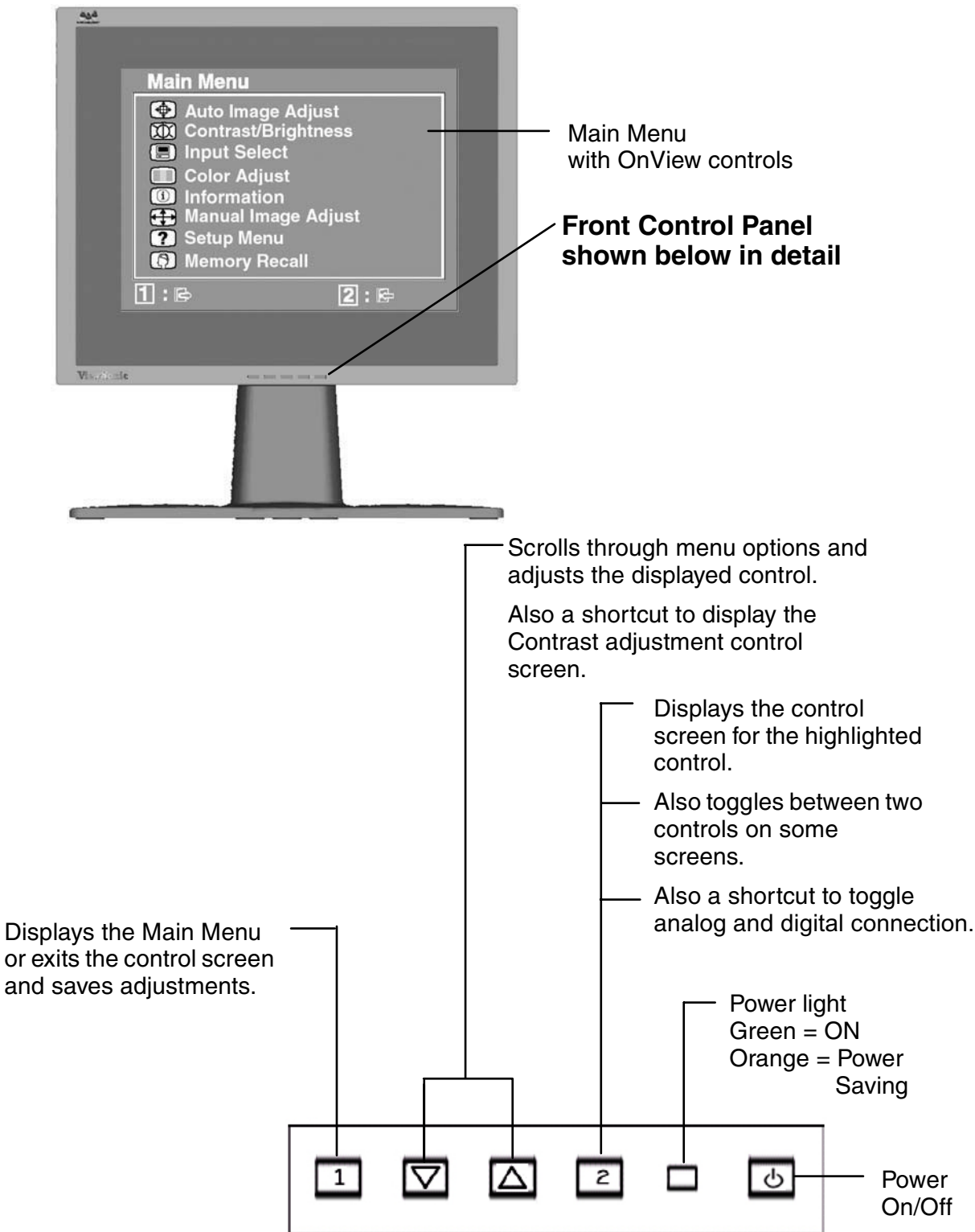
F. 128 bytes of EDID code for VP2000s digital

	0	1	2	3	4	5	6	7	8	9
0	00	FF	FF	FF	FF	FF	FF	00	5A	63
10	1A	23	01	01	01	01	01	0E	01	03
20	80	29	1F	78	2A	60	E5	A3	57	4B
30	9C	25	11	50	54	BF	EF	80	A9	40
40	81	80	81	40	71	4F	61	59	45	59
50	31	59	31	0A	48	3F	40	30	62	B0
60	32	40	40	C0	13	00	98	32	11	00
70	00	1E	00	00	00	FF	00	50	39	34
80	30	34	30	31	30	30	30	30	31	0A
90	00	00	00	FD	00	32	55	1E	5C	11
100	00	0A	20	20	20	20	20	20	00	00
110	00	FC	00	56	50	32	30	30	30	73
120	0A	20	20	20	20	20	00	78		

3. Front Panel Function Control Description

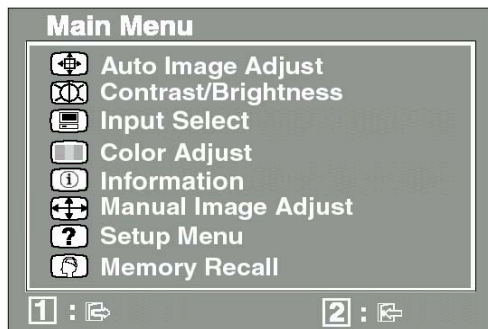
Adjusting the Screen Image

Use the buttons on the front control panel to display and adjust the OnView® controls which display on the screen. The OnView controls are explained at the top of the next page.



Do the following to adjust the screen image:

- 1 To display the Main Menu, press button [1].



NOTE: All OnView menus and adjustment screens disappear automatically after about 30 seconds.

- 2 To select a control you want to adjust, press ▲ or ▼ to scroll up or down the Main Menu.
- 3 After the control is selected, press button [2].
- 4 To adjust the control, press the up ▲ or down ▼ buttons.
- 5 To save the adjustments and exit the menu, press button [1] *twice*.

The following tips may help you optimize your display:

- Adjust your computer's graphic card so that it outputs a video signal 1600 x 1200 @ 60 Hz to the LCD display. (Look for instructions on “changing the refresh rate” in your graphic card's user guide.)
- If necessary, make small adjustments using H POSITION and V POSITION until the screen image is completely visible. (The black border around the edge of the screen should barely touch the illuminated “active area” of the LCD display.)

Main Menu Controls

Adjust the menu items shown below by using the up ▲ and down ▼ buttons.

Control	Explanation
---------	-------------



Auto Image Adjust automatically sizes, centers, and fine tunes the video signal to eliminate waviness and distortion.

Press the [2] button to obtain a sharper image.

NOTE: Auto Image Adjust works with most common video cards. If this function does not work on your LCD display, then lower the video refresh rate to 60 Hz and set the resolution to its pre-set value.



Contrast adjusts the difference between the image background (black level) and the foreground (white level).



Brightness adjusts background black level of the screen image.



Input Select allows you to toggle between an analog and a digital signal.



Color Adjust provides several color adjustment modes: preset color temperatures and **RGB** which allows you to adjust red (**R**), green (**G**), and blue (**B**) separately. The factory setting for this product is 6500K (6500 Kelvin).



9300K — Adds blue to the screen image for cooler white (used in most office settings with fluorescent lighting).

6500K — Adds red to the screen image for warmer white and richer red.

5400K — Adds green to the screen image for a darker color.

5000K — Adds blue and green to the screen image for a darker color.

User Color — Individual adjustments for red (R), green (G), and blue (B).

1 To select color (R, G or B) press button [2].

2 To adjust selected color, press ▲ or ▼.

Control	Explanation
---------	-------------

Important: If you select RECALL from the Main Menu when the product is set to a Preset Timing Mode, colors return to the 6500K factory preset.



Information displays the timing mode (video signal input) coming from the graphics card in your computer. See your graphic card's user guide for instructions on changing the resolution and refresh rate (vertical frequency).

NOTE: VESA 1600 x 1200 @ 60 Hz (recommended) means that the resolution is 1600 x 1200 and the refresh rate is 60 Hertz.



Manual Image Adjust displays the Manual Image Adjust menu.



The **Manual Image Adjust** controls are explained below:

Horizontal Position moves the screen image left or right.

Vertical Position moves the screen image up or down.

Horizontal Size adjusts the width of the screen image.

Fine Tune sharpens focus by aligning the illuminated text and/or graphic characters.

Sharpness adjusts the clarity and focus of the screen image.

Scaling adjusts the video input signal to the screen size other than 1600 x 1200 using the following options.

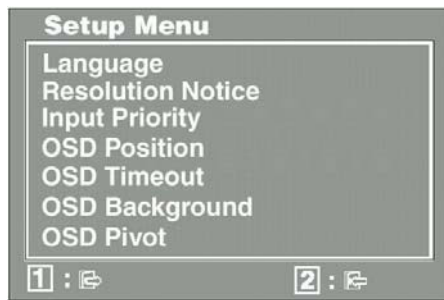
1:1 adjusts the video signal so that the height and width of the picture are the same.

Fill all adjusts the video signal to fill the screen.

Fill Aspect Ratio maintains the correct video signal proportions for different resolutions.



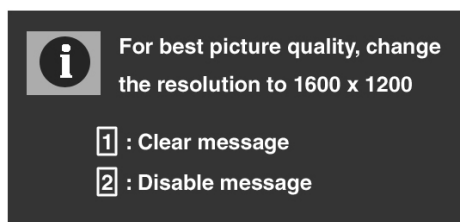
Setup Menu displays the menu shown below.



The **Setup Menu** controls are explained below:

Language allows you to choose the language used in the menus and control screens.

Resolution Notice displays the Resolution Notice menu shown below.



Resolution Notice advises the optimal resolution to use.

Input Priority If multiple computers will be connected to the display, this function can be used to select which computer has priority. Depending on the selected Input Priority, the display will do a one time detection for available inputs when first powered on.



OSD Position allows you to move the on-screen display menus and control screens.

OSD Timeout sets the length of time an on-screen display screen is displayed. For example, with a “15 second” setting, if a control is not pushed within 15 seconds, the display screen disappears.

Control	Explanation
---------	-------------

OSD Background allows you to turn the On-Screen-Display background on or off.

OSD Pivot This function is used to rotate the OSD menu, when the display is changed from Landscape to Portrait mode.



Memory Recall returns adjustments to the original factory settings if the display is operating in a factory Preset Timing Mode listed in this user guide.

Exception: This control does not affect changes made with the User Color control.

4. Circuit Description

1. Power supply (DC/DC Converter):

1.1 IC251 BA9741F is a two-channel switching regulator controller that uses PWM method. For DC to DC conversion for step-down. It converts a 12V DC into regulated and stable output voltage of 5V.

1.2 Regulator:

IC252, IC253, IC254, IC255 function is to convert 5V into regulated and stable O/P of 3.3V and 2.5V. IC252 converts 5V to 2.5V; converts 5V to 3.3V; IC253, IC254, IC255.

2. DDC data select:

2.1 IC601 is save D-SUB DDC data.

2.2 IC606 save DVI-A analog DDC data, IC605 save DVI-D digit DDC data.

IC604 is triple 2 channel analog multiplexes / de-multiplexes, IC604 pin 10 & 11 is “Lo” select IC605 DDC data, IC604 pin 10 & 11 is “Hi” select IC606 DDC data.

3. ADC (Analog):

The IC608 AD9888 is a complete 8-bit, 205MSPS monolithic analog interface optimized for capturing RGB graphics signal from PC. The IC608 have two input source (D-SUB & DVI-A), the input source control by I²C from IC401 scaler.

4. TMDS (DVI):

The IC609 THC63DV161 is a TMDS receiver compliant with DVI Rev. 1.0.

The IC609 turn on/off control by pin 2 “DPD” from IC401 scaler.

5. Scaler:

The PW166B image processor is a highly integrated “system-on-a-chip” that interfaces analog, digital, and video inputs in virtually any format to a digital projection system or multimedia display.

Any embedded SDRAM frame buffer and memory controller perform frame rate conversion. Computer images from VGA to UXGA at almost any refresh rate can be resized to fit on a fixed-frequency target display device with any resolution up to UXGA with full 24-bit color.

The PW166B includes advanced second generation image scaling that provides completely programmable, horizontal and vertical image scaling.

The PW166B also includes advanced second-generation sync decoding which provides full support for a wide variety of sync types. This includes interlaced, progressive, sync-on-green, and TMDS DE (Data Enable) only.

An integrated OSD controller provides bit-mapped based OSD with 16 colors from a 64K color palette. The OSD controller supports transparent and translucent functions.

The Graphics Port (GPort) captures computer graphics inputs with very high input bandwidth through an external IC608 Analog-To-Digital converter (ADC) or IC609 digital interface receiver.

The DPort is designed to be connected directly to LVDS (IC501, IC502).

The output timing is fully programmable and is independent of the input timing.

An on-chip 80x86 microprocessor with custom features for image processing applications is provided. Built in port interrupts, General Purpose I/O (GPIO), UART, IR Decoders, Timers and PWM Generator provide a full featured hardware base to build on.

6. LVDS Transmitter:

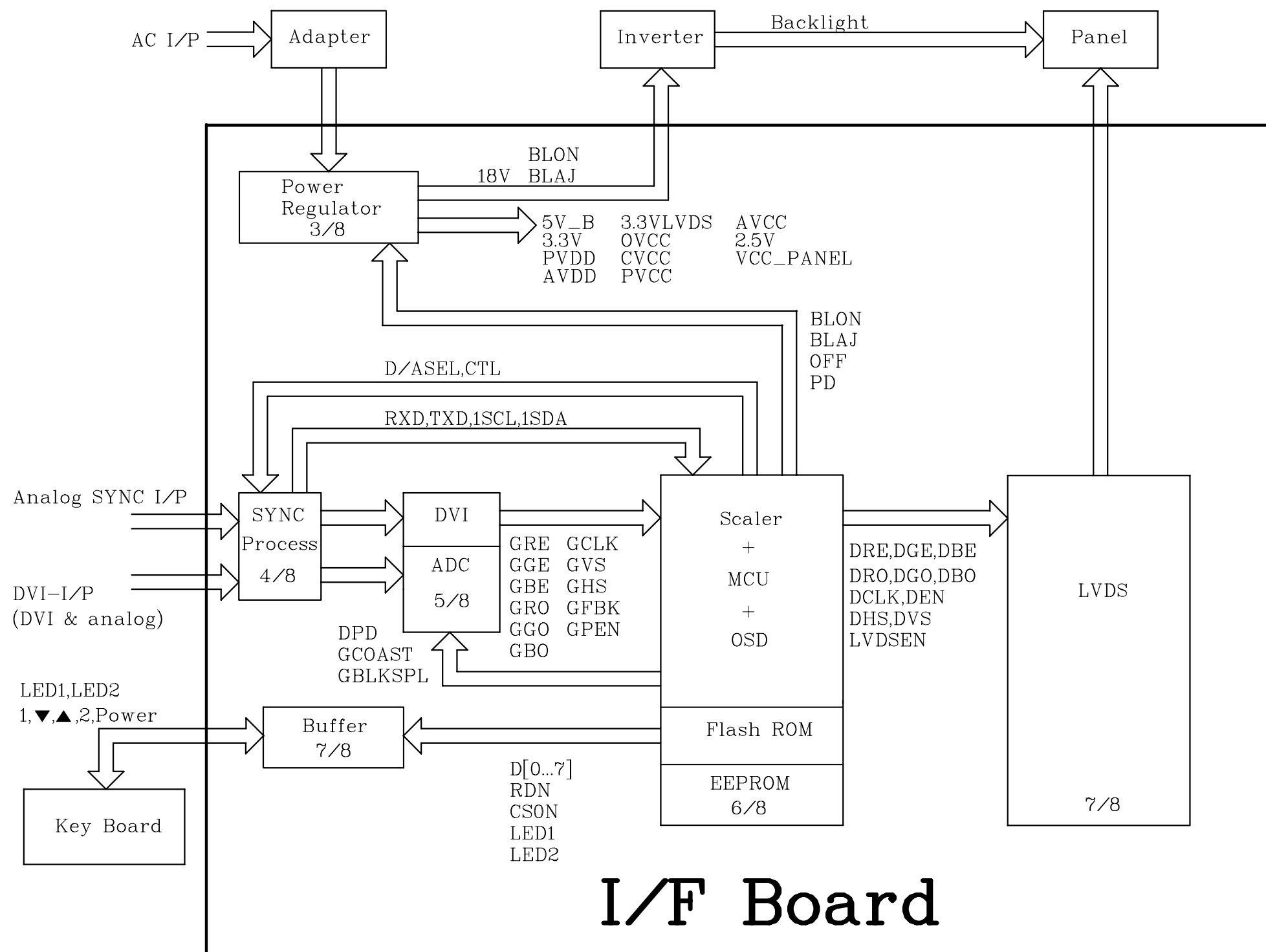
The IC501, IC502 transmitter converts 28 bits of CMOS/TTL data into LVDS (Low Voltage Differential Signaling) data stream. A phase-locked transmit clock is transmitted in parallel with the data streams over a fifth LVDS link.

7. USB HUB Controller:

IC951 is a high speed USB HUB controller, this single-chip device incorporates one upstream and four downstream USB transceivers.

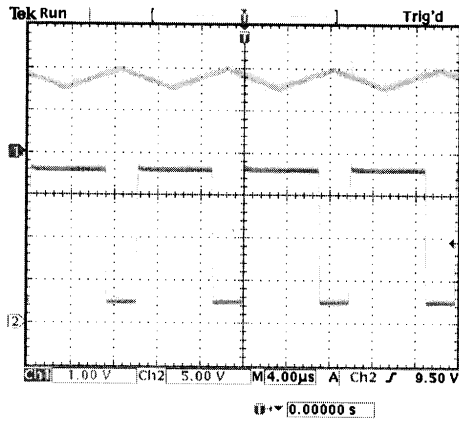
IC951 CY7C65640 includes interface signals for external port power switches. The power switching and over-current detection of downstream ports is managed by control pins connected to an external power switch device by IC952 & IC953.

IC954 is an EEPROM VID & PID configured.

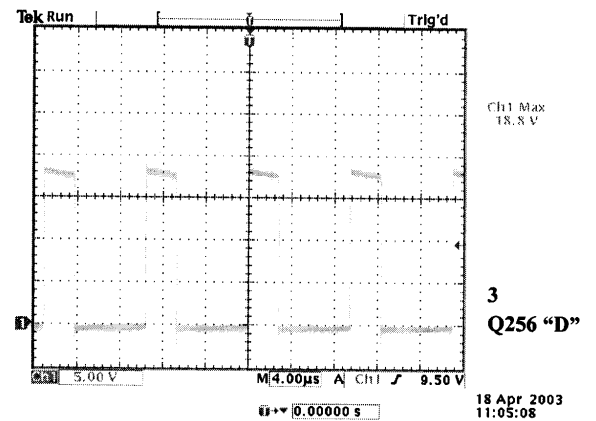


Date: 04-15-2003	LY.REV:	Drawn: I.P.CHANG	Checked	Approved	PART NO.	REV.	SHEET
PWB: 036702-0	FILE NAME: VP211/VP201		Jose	WP.Liu	VP201		
DESCRIPTION: SCHEMATIC OF LCD MONITOR			04-15-2003	04-15-2003			

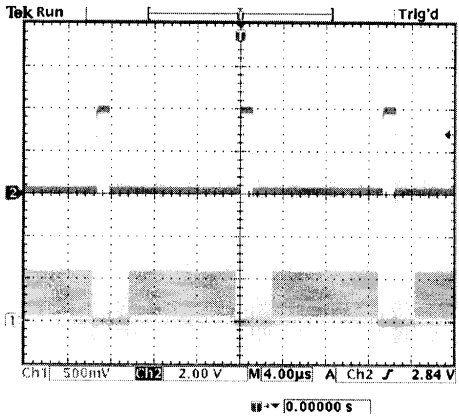
Figure of Waveform



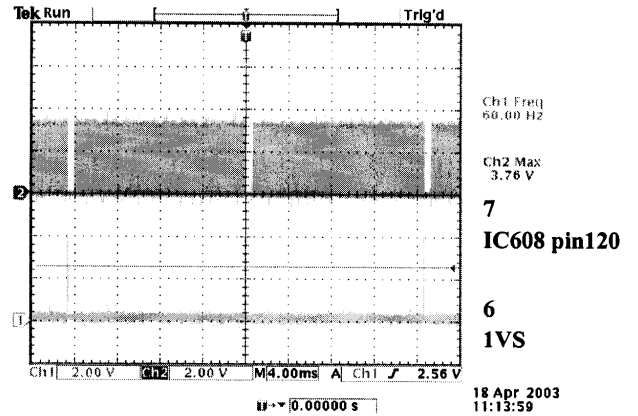
18 Apr 2003
11:03:32



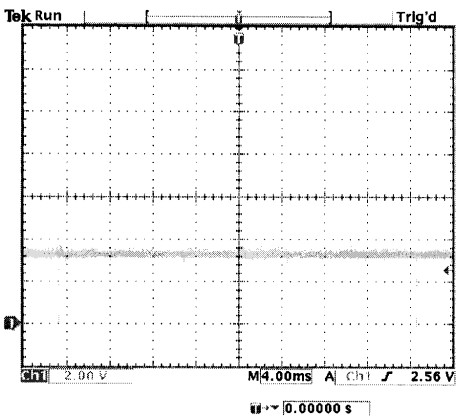
18 Apr 2003
11:05:08



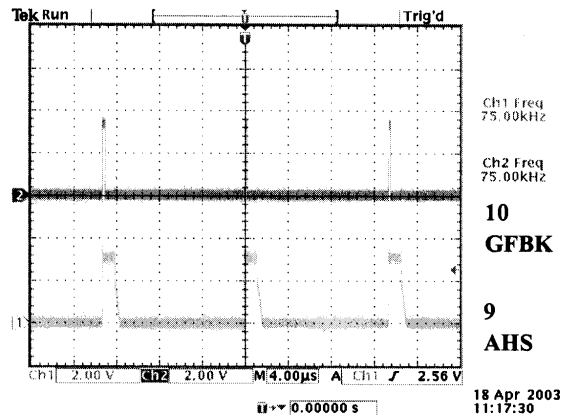
18 Apr 2003
11:11:33



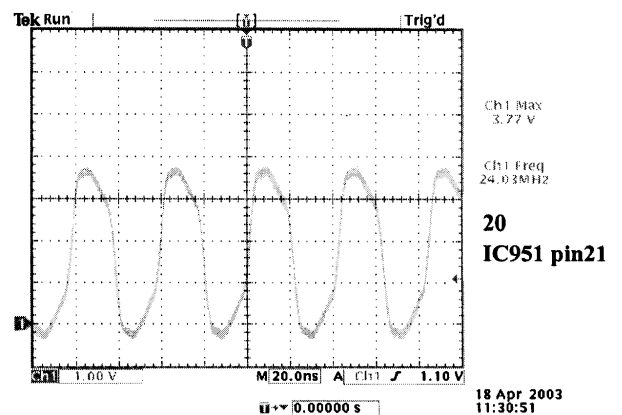
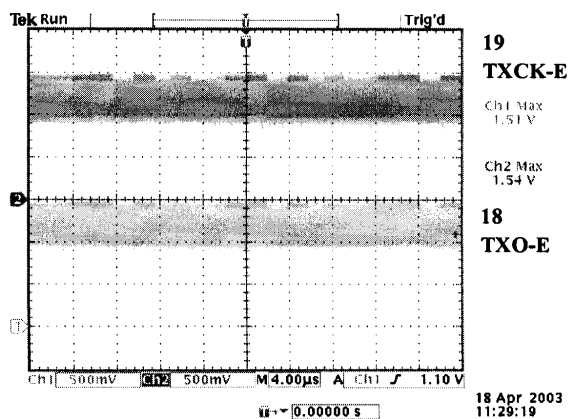
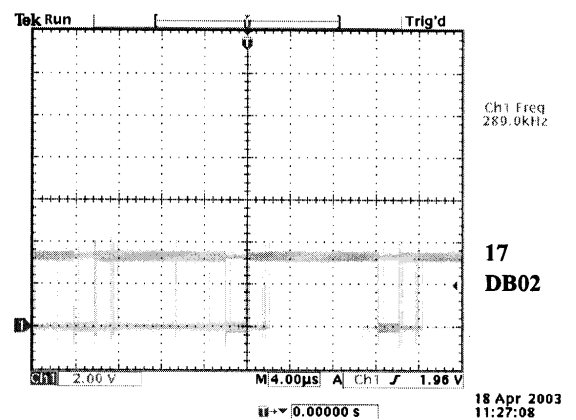
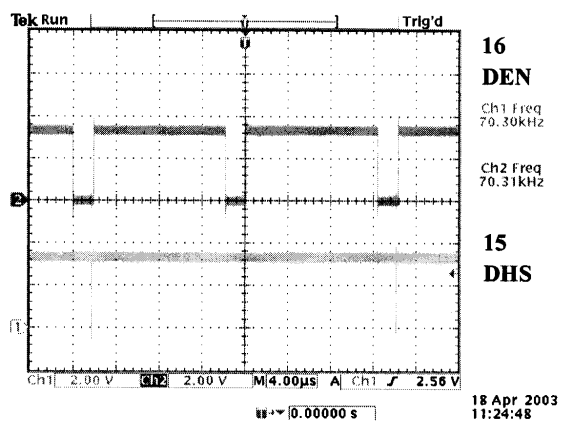
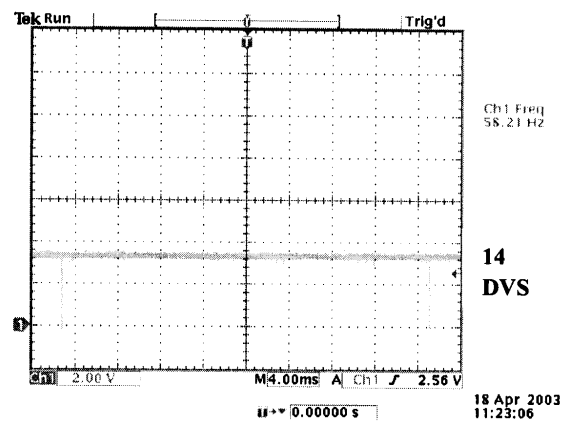
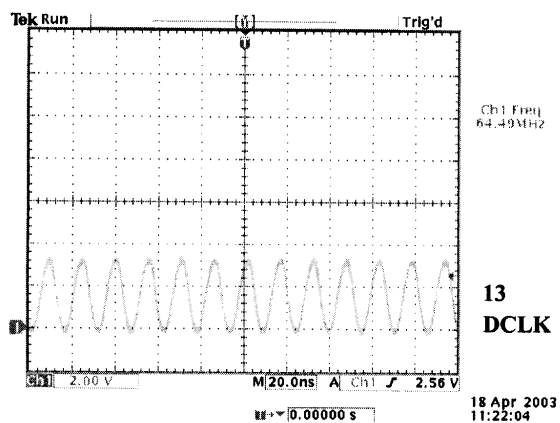
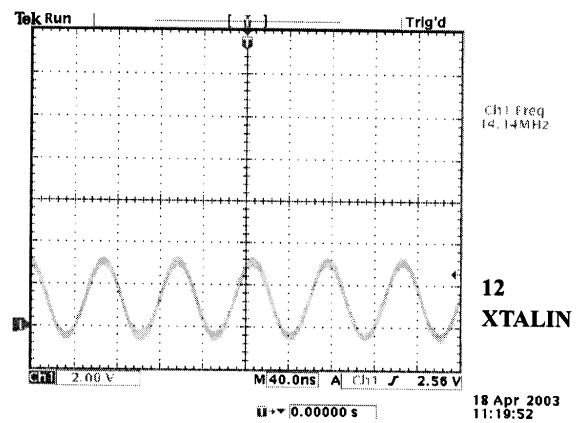
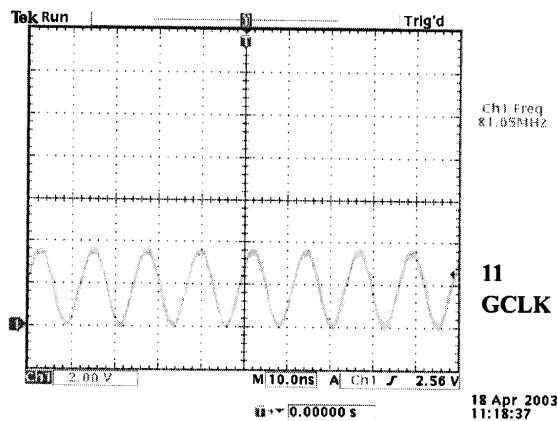
18 Apr 2003
11:13:59



18 Apr 2003
11:16:13



18 Apr 2003
11:17:30

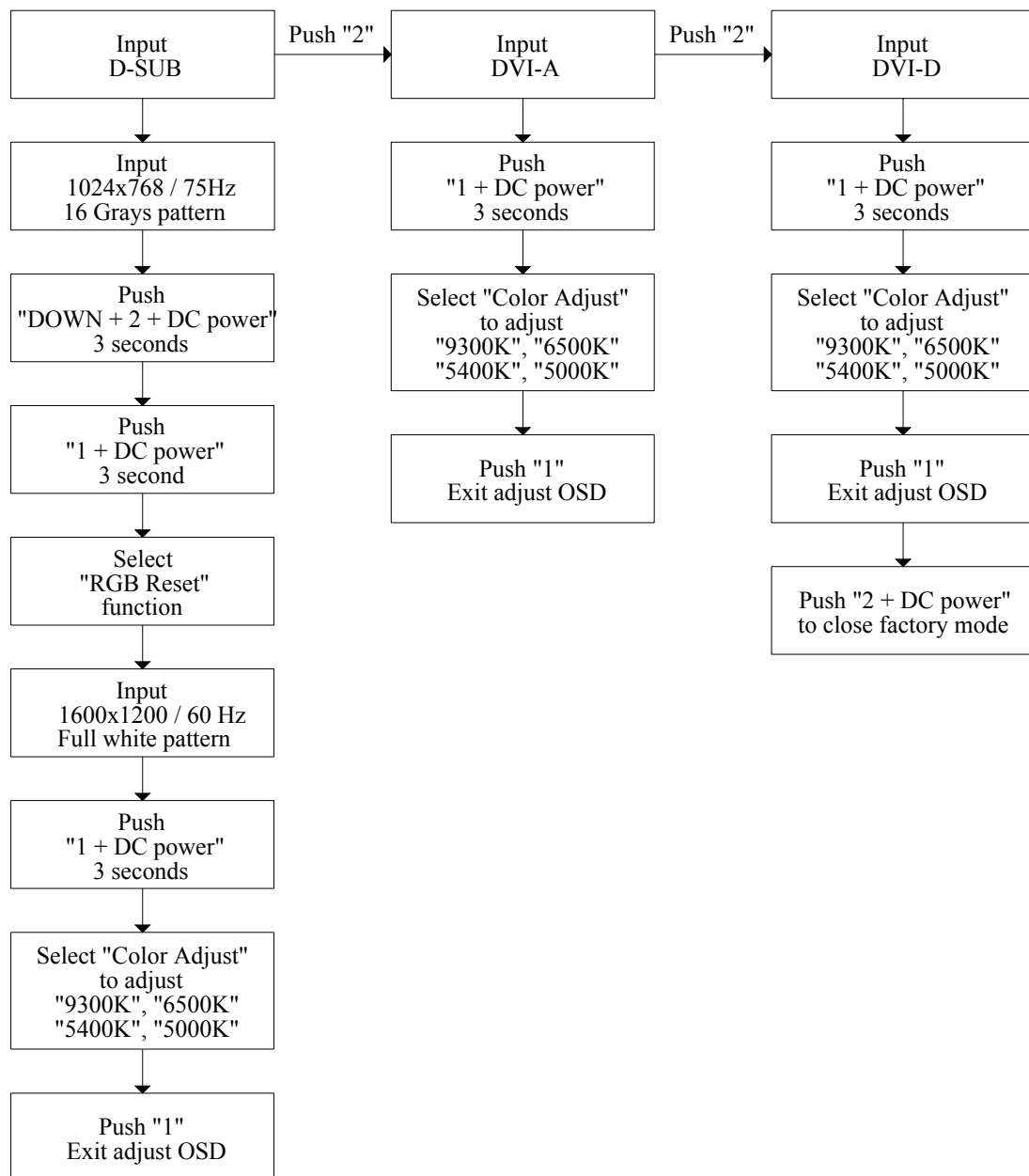


5. Adjusting Procedure

A. General.

1. All specification must be met over line voltage range of $90V_{AC}$ to $264V_{AC}$ 50Hz / 60Hz, unless otherwise specified.
2. Operating temperature range is $0^{\circ}C$ to $40^{\circ}C$ with a relative humidity of 10% or less to 80%.
3. The monitor must be operational in a usable state within 30 minutes after turn-on.
4. All signal levels are measured assuming termination at the monitor's input jacks or in its characteristic impedance.
5. All controls must have excess range (no control may be left at an end stop when proper alignment is completed).
6. The monitor is not required to meet specs during the following but must tolerate, without damage to the LCD or circuits, any sequence or combination of power on and off, signal on and off, erratic, wrong frequency or noisy inputs while at any possible unplugging of power or signal, settings of user accessible controls likewise, the monitor should survive extended periods of operation with line voltage reduced below the specified minimum.
7. An isolation transformer should be used when performing alignment and tests, Portions of the power supply board are hot ground, The remaining boards are cold ground.
8. Ambient condition:
 - 8.1 Illumination: 150 ~ 260 lux.
 - 8.2 Environmental noise: Less than 60dB.
 - 8.3 Interference of EMI: No excessive electric or magnetic fields.
 - 8.4 Temperature: $24 \pm 2^{\circ}C$.
 - 8.5 Humidity: $65 \pm 20\%$.

B. Instrument alignment.
1. Adjustment procedure.



2. Video alignment.

1.1 Preset condition.

1.1.1 Setting the contrast to 70%, brightness to 100%.

1.1.2 Input 1024x768 / 75Hz, 16 gray pattern (input level 100IRE 0.7Vp-p), then press “RGB RESET”.

9300K / 6500K / 5400K / 5000K, R G B sub-contrast preset as below:

	9300K		6500K		5400K		5000K	
	Analog	DVI	Analog	DVI	Analog	DVI	Analog	DVI
R sub-contrast	128	128	128	128	128	128	128	128
G sub-contrast	128	128	128	128	128	128	128	128
B sub-contrast	128	128	128	128	128	128	128	128

1.2 9300K alignment:

1.2.1 Input 1024x768 / 75Hz & full white pattern at 100IRE.

1.2.2 Adjust R, G, and B sub-contrast to meet following chromaticity spec:

9300K $\rightarrow x = 0.283 \pm 0.005$, $y = 0.298 \pm 0.005$, $Y > 150\text{cd/m}^2$ (Both analog & DVI).

1.3 6500K alignment:

1.3.1 Input 1024x768 / 75Hz & full white pattern at 100IRE.

1.3.2 Adjust R, G and B sub-contrast to meet following chromaticity spec:

6500°K $\rightarrow x = 0.313 \pm 0.005$, $y = 0.329 \pm 0.005$, $Y > 200\text{cd/m}^2$ (Both analog & DVI).

1.4 5400K alignment:

1.4.1 Input 1024x768 / 75Hz & full white pattern at 100IRE.

1.4.2 Adjust R, G, and B sub-brightness to meet following chromaticity spec:

5400K $\rightarrow x = 0.335 \pm 0.005$, $y = 0.350 \pm 0.005$, $Y > 180\text{cd/m}^2$ (Both analog & DVI).

1.5 5000K alignment:

1.5.1 Input 1024x768 / 75Hz & full white pattern at 100IRE.

1.5.2 Adjust R, G and B sub-contrast to meet following chromaticity spec:

5000°K $\rightarrow x = 0.346 \pm 0.005$, $y = 0.359 \pm 0.005$, $Y > 180\text{cd/m}^2$ (Both analog & DVI).

1.6 64grays & 16grays pattern check:

1.6.1 Input 1600x1200 / 60Hz & 64 grays pattern at 100IRE, adjust brightness 100%, and contrast 70%.

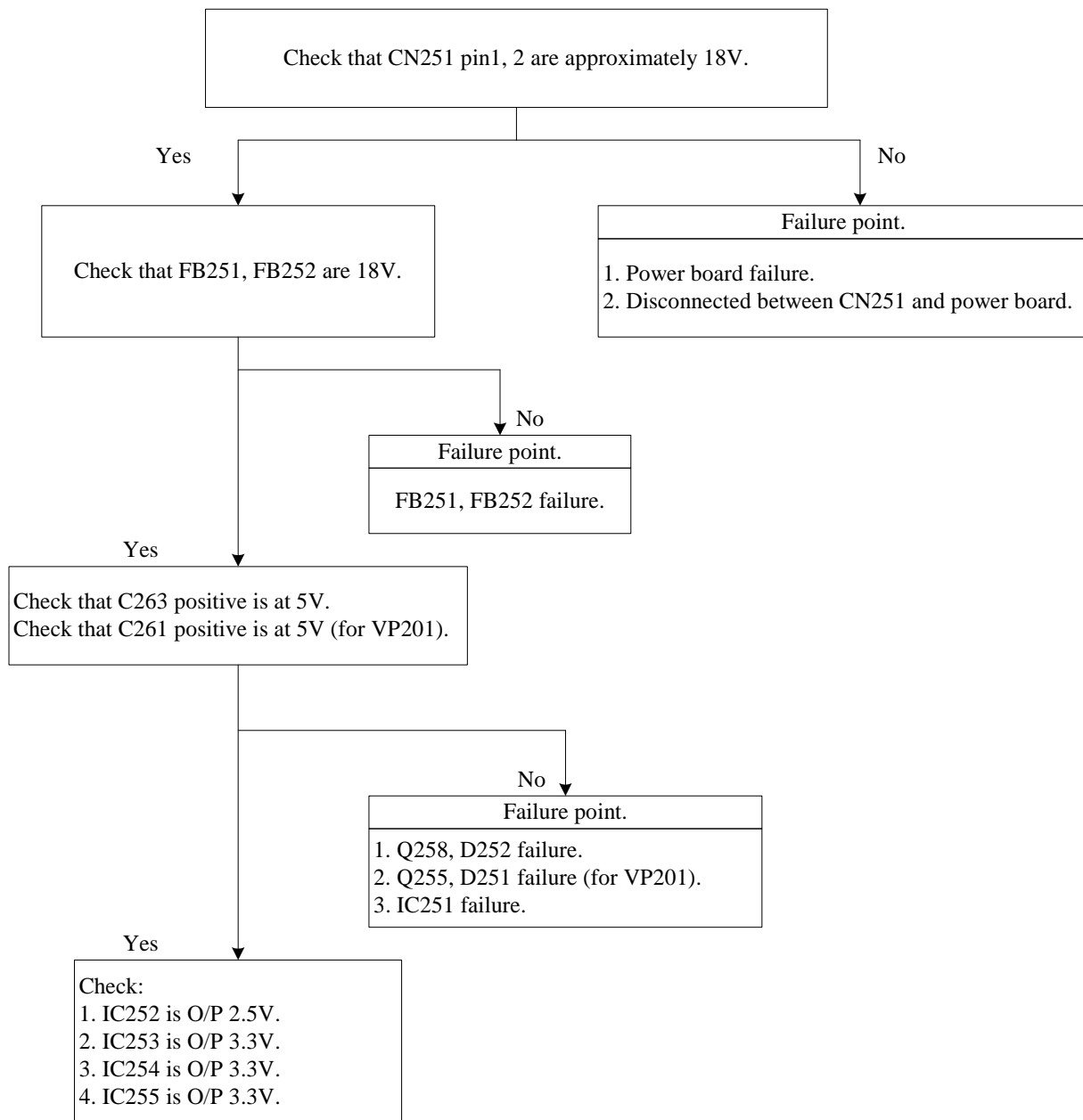
1.6.2 9300K / 6500K / 5400K / 5000K, the 64 grays can 2steps saturation.

1.6.3 Input 1600x1200 / 60Hz & 16 grays pattern at 100IRE, adjust brightness 100%, and contrast 100%.

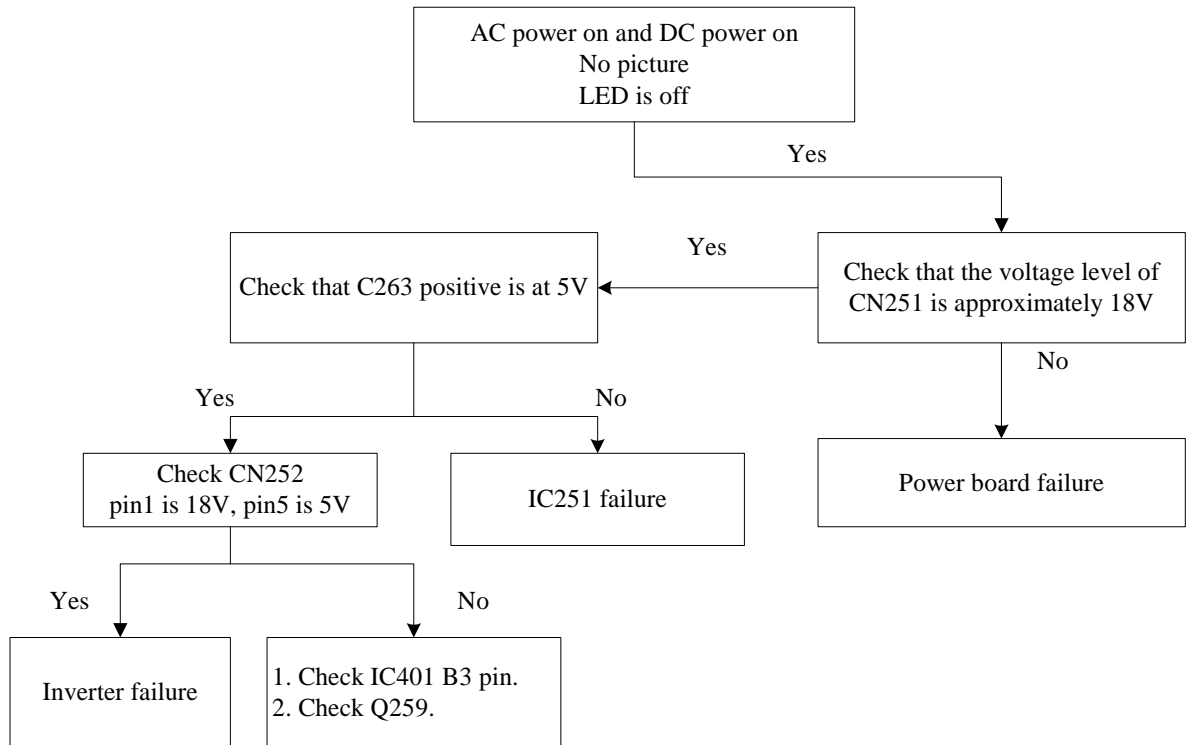
1.6.4 9300K / 6500K / 5400K / 5000K, the 16 grays only had 3 grays can saturation.

6. Trouble Shooting Flow Chart

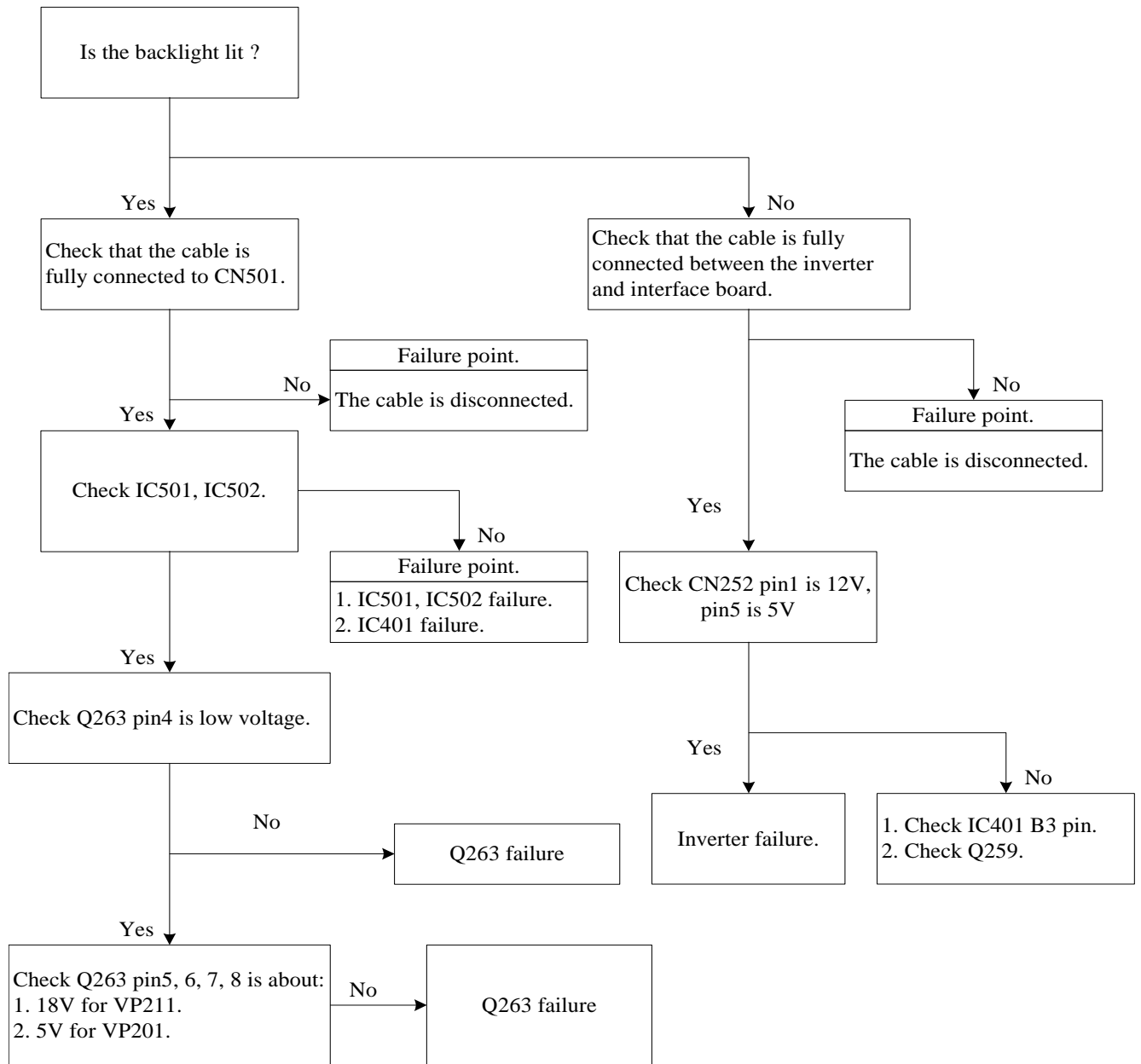
1. No power.



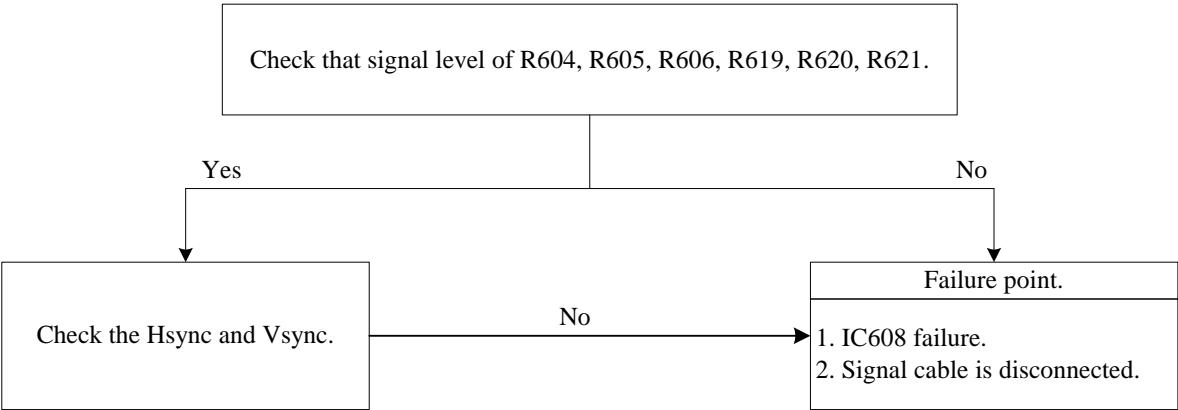
2. No display on screen (Screen is black, LED is off).



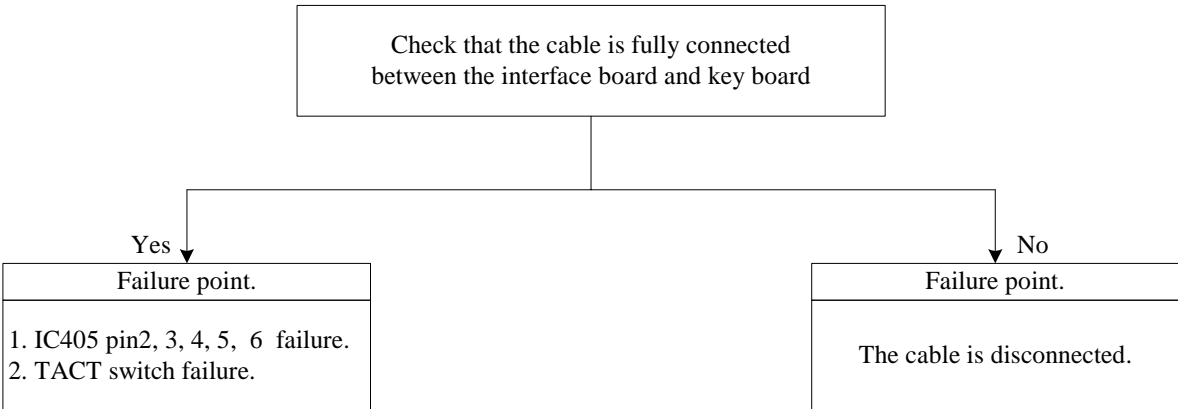
3. No display on screen (LED is green).



4. Show “No signal” on screen.



5. Keypad cannot work.



7. Recommended Spare Parts List

VP2000s-1 RSPL Rev 1a (Initial)

Item	ViewSonic P/N	Ref. P/N	Description	Q'ty
1	B-PS-0204-0060	993027602	POWER 90-264VAC 18V 3.33A COMPUTER	1
2	E-L-0407-1587	2921021404	CORE BEAD 40*6.5*10 W5H+TAPE	1
3	M-SW-0815-0224	3000725101	SWITCH MEMBRANCE PET 99.5*9 VP181-	1
4	A-VC-0101-0390	3080427000	CABLE D-SUB/D-SUB L1800 BLK OD7.5	1
5	M-FC-0809-0838	3080516300	CABLE FFC 30P P1.0 L340 T1	1
6	A-PC-0106-0150	3090107600	AC POWER CORD L=1800 BLACK UL/CSA	1
7	M-SCW-0824-0772	3100130800	SCREW M M3*0.5*8 FPH C S20C ZN BLK	4
8	M-SCW-0824-0690	3105051501	SCREW M #4-40*7 HEXH #4-40*3 S18C	4
9	M-SCW-0824-0775	3105123700	SCREW M M4*0.7*10 FF C S18C ZN BLK	4
10	M-SCW-0824-0776	3105221000	SCREW M M3*0.5*6 FF C S18C ZN	6
11	M-SCW-0824-0777	3105225300	SCREW M M3*0.5*4 FF C S18C ZN	6
12	M-SCW-0824-0784	3109010700	SCREW T M3*0.5*7 PAN C S+P S20C ZN	1
13	M-SCW-0824-0732	3109010900	SCREW T M3*0.5*4 BIND C S18C ZN YE	4
14	M-SCW-0824-0413	3109011400	SCREW T M3*0.5*6 BIND C S18C ZN YE	4
15	M-MS-0808-8040	3110250000	WASHER SPRING SWRT	4
16	M-LB-0813-0785	3200158900	LABEL STICKER OD10 WHT HI-POT	1
17	M-MS-0808-8556	3200649100	NAME PLATE VSC 3-BIRD LOGO AL 11.0	1
18	M-LB-0813-0978	3200787200	LABEL BAR CODE 124*82	1
19	M-LB-0813-1049	3201979200	LABEL ID 100*50 VSC VP2000S	1
20	M-LB-0813-0900	3202011000	LABEL SERIES PANEL 42*11 T0.05	1
21	M-LB-0813-0714	3202310700	LABEL HV WARNING 100*25	1
22	M-LB-0813-1050	3209218400	LABEL POP STICKER 89*89 VSC	1
23	M-MS-0808-8624	3211030700	MYLAR FILM 430*330 T.1 L20CBR05ACA	1
24	M-MS-0808-0724	3220161733	TAPE W=20 #3800A NITTO	0.15
25	M-MS-0808-7463	3220501600	TAPE W=30 #10 3M	0.29
26	M-MS-0808-7810	3220605633	TAPE W=45 #7290 NITTO	0.128
27	M-MS-0808-4975	3221101500	TAPE W=76 PP47 914M 4P	0.8
28	M-MS-0808-0918	3221903300	TAPE PE W=50 VIEWSONIC SECURITY	1.028
29	M-MS-0808-1679	3222201300	TAPE AL FOIL W=25 #80023 CATERON	0.18
30	M-MS-0808-1680	3222400310	TAPE W=16 #897 3M	0.03
31	M-MS-0808-8557	3240055600	CONDUCTIVE TAPE AL W50*L55 1120	1
32	M-MS-0808-2276	3240160801	SPONGE EVA 5.8*5 T.5 BLK	1
33	M-MS-0808-2631	3240946900	RUBBER SILICON 12*12 T5	2
34	PL-PD-0714-0140	3240970900	RUBBER PAD 22*4 T3 BLK	1
35	M-MS-0808-0016	3241127301	INSULATOR PC 130*118.5 T.5	1
36	M-MS-0808-8627	3241127400	INSULATOR PC 231*13 T.5	1
37	PL-NB-0707-1075	3360627100	POWER KNOB POM 901U 5140 S8LFB1LS	1
38	M-CV-0830-2458	3361207400	COVER VESA ABS 41S8LBB1LS	1
39	M-CV-0830-2602	3368222700	CABINET ASSY L20CBR05DDB SOLRA1AT	1
40	C-FP-0301-1050	3368311100	F/B ASSY L20CBR05CDB SOLFA1AT	1
41	C-BS-0303-0554	3368991402	STAND ASSY L20CBR05ADB S8LBB1LS SE	1
42	M-MS-0808-8630	3460150100	BRACKET PANEL SIDE-R SECC 325*30*2	1
43	M-MS-0808-8631	3460150200	BRACKET PANEL SIDE-L SECC 325*30*2	1
44	M-MS-0808-8637	3461226402	SHIELD CAN IF SPTH 298.9*150.1*41.	1
45	M-MS-0808-8638	3461226500	SHIELD CAN INV SPTH 210*73.8*18 T.	1
46	M-MS-0808-8640	3463000700	CONDUCTIVE AL 15*25 T0.06	1
47	M-MS-0808-8642	3463002000	CONDUCTIVE AL 50*100 T.06	2
48	M-MS-0808-2660	3470903500	HANDLE PE 162*40.5 T1.5 BOTTOM NO5	1
49	M-MS-0808-2662	3470903600	HANDLE PE 209*18 T1.8 TOP NO501	1
50	M-MS-0808-8643	3472851200	CONDUCTIVE SPONGE 30*8.5*10	1
51	M-MS-0808-8646	3472855100	CONDUCTIVE SPONGE 10*10*12	1
52	P-FM-0602-0591	3500105500	END BLOCK-TOP EPS L20CBW05AAW	1
53	P-FM-0602-0592	3500105600	END BLOCK-BOTTOM EPS L20CBW05AAW	1
54	M-MS-0808-8762	3500937501	PE BAG 300*200*0.06T	1
55	M-MS-0808-2667	3500939901	PE BAG 740*580*.06T CLEAR	1
56	M-MS-0808-2671	3500943900	PE BAG 75*75*160L T.1	2
57	M-MS-0808-3190	3510449200	CAP PAPER 1130*1390*120	0.032
58	M-MS-0808-2672	3510449300	CAP PAPER 1130*700*120	0.063
59	M-MS-0808-2815	3511208300	ANGLE PAPER 2070*55*55 T5	0.375
60	P-BX-0601-1023	3512268400	CARTON 552*337*489 VSC VP2000S	1
61	M-MS-0808-5135	3520082400	PE FILM t=0.02mm W=500	0.04
62	M-MS-0808-7820	3520130500	DRYER 15G 80*60	2
63	PL-SP-0723-0002	3520142700	PLASTIC STRIP W=12 T.5 BLACK	1
64	A-CD-VP2000S	3532086300	CD-ROM VSC A-CD-VP2000S	1
65	M-MS-0808-3151	3532086400	MANUAL PACKING ASSY VSC VP2000S	1
66	M-BK-0805-0112	3790195400	PANEL BKT L20CBR05DDB	1
67	B-SB-0221-0529	4900505280	DC-AC INVERTER 20" LG PANEL	1

VP2000s-1 BOM

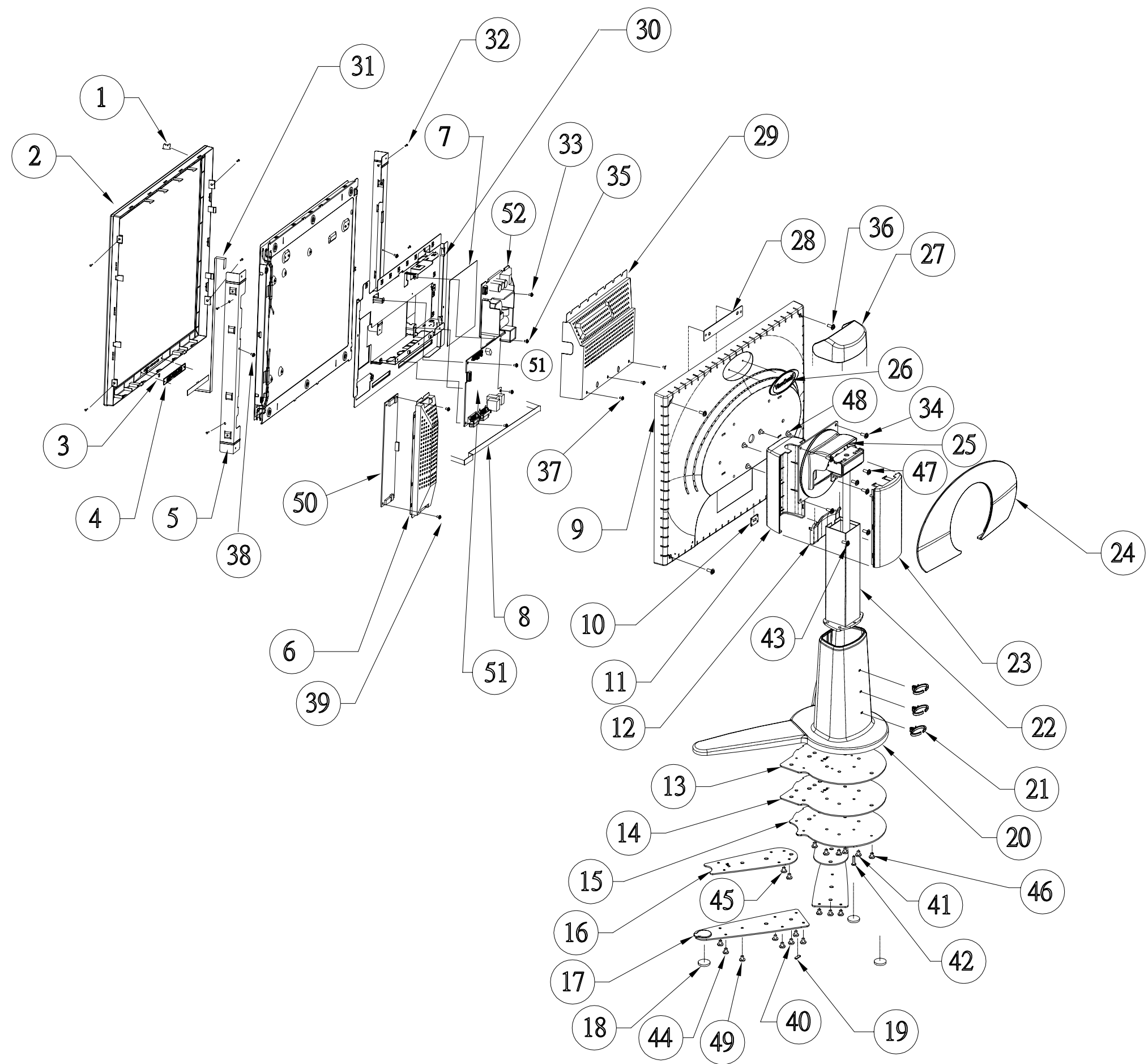
Rev 1a (Initial)

Item	ViewSonic P/N	Ref. P/N	Description	Location	Q'ty
1	B-PS-0204-0021	993027602	POWER 90-264VAC 18V 3.33A COMPUTER		1
2	E-L-0407-1587	2921021404	CORE BEAD 40*6.5*10 W5H+TAPE		1
3	M-SW-0815-0224	3000725101	SWITCH MEMBRANCE PET 99.5*9 VP181-		1
4	A-VC-0101-0390	3080427000	CABLE D-SUB/D-SUB L1800 BLK OD7.5		1
5	M-FC-0809-0838	3080516300	CABLE FFC 30P P1.0 L340 T1		1
6	M-SCW-0824-0772	3100130800	SCREW M M3*0.5*8 FPH C S20C ZN BLK		4
7	M-SCW-0824-0690	3105051501	SCREW M #4-40*7 HEXH #4-40*3 S18C		4
8	M-SCW-0824-0775	3105123700	SCREW M M4*0.7*10 FF C S18C ZN BLK		4
9	M-SCW-0824-0776	3105221000	SCREW M M3*0.5*6 FF C S18C ZN		6
10	M-SCW-0824-0777	3105225300	SCREW M M3*0.5*4 FF C S18C ZN		6
11	M-SCW-0824-0784	3109010700	SCREW T M3*0.5*7 PAN C S+P S20C ZN		1
12	M-SCW-0824-0732	3109010900	SCREW T M3*0.5*4 BIND C S18C ZN YE		4
13	M-SCW-0824-0413	3109011400	SCREW T M3*0.5*6 BIND C S18C ZN YE		4
14	M-MS-0808-8040	3110250000	WASHER SPRING SWRT		4
15	M-LB-0813-0785	3200158900	LABEL STICKER OD10 WHT HI-POT		1
16	M-MS-0808-8556	3200649100	NAME PLATE VSC 3-BIRD LOGO AL 11.0		1
17	M-LB-0813-0978	3200787200	LABEL BAR CODE 124*82		1
18	M-LB-0813-1049	3201979200	LABEL ID 100*50 VSC VP2000S		1
19	M-LB-0813-0900	3202011000	LABEL SERIES PANEL 42*11 T0.05		1
20	M-LB-0813-0714	3202310700	LABEL HV WARNING 100*25		1
21	M-LB-0813-1050	3209218400	LABEL POP STICKER 89*89 VSC		1
22	M-MS-0808-8624	3211030700	MYLAR FILM 430*330 T.1 L20CBR05ACA		1
23	M-MS-0808-0724	3220161733	TAPE W=20 #3800A NITTO		0.15
24	M-MS-0808-7463	3220501600	TAPE W=30 #10 3M		0.29
25	M-MS-0808-7810	3220605633	TAPE W=45 #7290 NITTO		0.128
26	M-MS-0808-4975	3221101500	TAPE W=76 PP47 914M 4P		0.8
27	M-MS-0808-0918	3221903300	TAPE PE W=50 VIEWSONIC SECURITY		1.028
28	M-MS-0808-1679	3222201300	TAPE AL FOIL W=25 #80023 CATERON		0.18
29	M-MS-0808-1680	3222400310	TAPE W=16 #897 3M		0.03
30	M-MS-0808-8557	3240055600	CONDUCTIVE TAPE AL W50*L55 1120		1
31	M-MS-0808-2276	3240160801	SPONGE EVA 5.8*5 T.5 BLK		1
32	M-MS-0808-2631	3240946900	RUBBER SILICON 12*12 T5		2
33	PL-PD-0714-0140	3240970900	RUBBER PAD 22*4 T3 BLK		1
34	M-MS-0808-0016	3241127301	INSULATOR PC 130*118.5 T.5		1
35	M-MS-0808-8627	3241127400	INSULATOR PC 231*13 T.5		1
36	PL-NB-0707-1075	3360627100	POWER KNOB POM 901U 5140 S8LFB1LS		1
37	M-CV-0830-2458	3361207400	COVER VESA ABS 41S8LBB1LS		1
38	M-CV-0830-2602	3368222700	CABINET ASSY L20CBR05DDB SOLRA1AT		1
39	C-FP-0301-1050	3368311100	F/B ASSY L20CBR05CDB SOLFA1AT		1
40	C-BS-0303-0554	3368991402	STAND ASSY L20CBR05ADB S8LBB1LS SE		1
41	M-MS-0808-8630	3460150100	BRACKET PANEL SIDE-R SECC 325*30*2		1
42	M-MS-0808-8631	3460150200	BRACKET PANEL SIDE-L SECC 325*30*2		1
43	M-MS-0808-8637	3461226402	SHIELD CAN IF SPTH 298.9*150.1*41.		1
44	M-MS-0808-8638	3461226500	SHIELD CAN INV SPTH 210*73.8*18 T.		1
45	M-MS-0808-8640	3463000700	CONDUCTIVE AL 15*25 T0.06		1
46	M-MS-0808-8642	3463002000	CONDUCTIVE AL 50*100 T.06		2
47	M-MS-0808-2660	3470903500	HANDLE PE 162*40.5 T1.5 BOTTOM NO5		1
48	M-MS-0808-2662	3470903600	HANDLE PE 209*18 T1.8 TOP NO501		1
49	M-MS-0808-8643	3472851200	CONDUCTIVE SPONGE 30*8.5*10		1
50	M-MS-0808-8646	3472855100	CONDUCTIVE SPONGE 10*10*12		1
51	P-FM-0602-0591	3500105500	END BLOCK-TOP EPS L20CBW05AAW		1
52	P-FM-0602-0592	3500105600	END BLOCK-BOTTOM EPS L20CBW05AAW		1
53	M-MS-0808-8762	3500937501	PE BAG 300*200*0.06T		1
54	M-MS-0808-2667	3500939901	PE BAG 740*580*0.06T CLEAR		1
55	M-MS-0808-2671	3500943900	PE BAG 75*75*160L T.1		2
56	M-MS-0808-3190	3510449200	CAP PAPER 1130*1390*120		0.032
57	M-MS-0808-2672	3510449300	CAP PAPER 1130*700*120		0.063
58	M-MS-0808-2815	3511208300	ANGLE PAPER 2070*55*55 T5		0.375
59	P-BX-0601-1023	3512268400	CARTON 552*337*489 VSC VP2000S		1
60	M-MS-0808-5135	3520082400	PE FILM t=0.02mm W=500		0.04
61	M-MS-0808-7820	3520130500	DRYER 15G 80*60		2
62	PL-SP-0723-0002	3520142700	PLASTIC STRIP W=12 T.5 BLACK		1
63	M-MS-0808-3275	3524009601	PALLET FUMIGATE 1120*1380*120		0.032
64	M-MS-0808-3374	3524009701	PALLET FUMIGATE 1120*690*120		0.063
65	A-CD-VP2000S	3532086300	CD-ROM VSC A-CD-VP2000S		1
66	M-MS-0808-3151	3532086400	MANUAL PACKING ASSY VSC VP2000S		1
67	M-BK-0805-0112	3790195400	OTHER ASSY PANEL BKT L20CBR05DDB		1
68	B-SB-0221-0529	4900505280	DC-AC INVERTER 20" LG PANEL		1
69	M-LCD-0826-0205	5052000450	LCD 20.1" TFT PANEL UXGA		1
70	#N/A	5600110257	LCD I/F BD ASSY L20CBR 05DDB		1
71	#N/A	341052300	RES CH 1/10W 4.7K F 0603	R260,R261	2
72	#N/A	341059300	RES CH 1/10W 10K F 0603	R273	1
73	#N/A	341070300	RES CH 1/10W 30K F 0603	R272	1
74	E-R-0405-7041	343000300	RES CH 1/10W ZERO J 0603	C256,R412,R417,R431	4
75	E-R-0405-7049	343100300	RES CH 1/10W 10 J 0603	R266	1
76	E-R-0405-6684	343101100	RES CH 1/8W 100 J 0805	R265	1
77	E-R-0405-6684	343101300	RES CH 1/10W 100 J 0603	R438,R439,R440,R441,R442,R608,R609,R618 R619,R620,R621,R622,R630,R633,R643,R65 0,R651,R652	18
78	E-R-0405-7054	343102300	RES CH 1/10W 1K J 0603	R419,R422	2

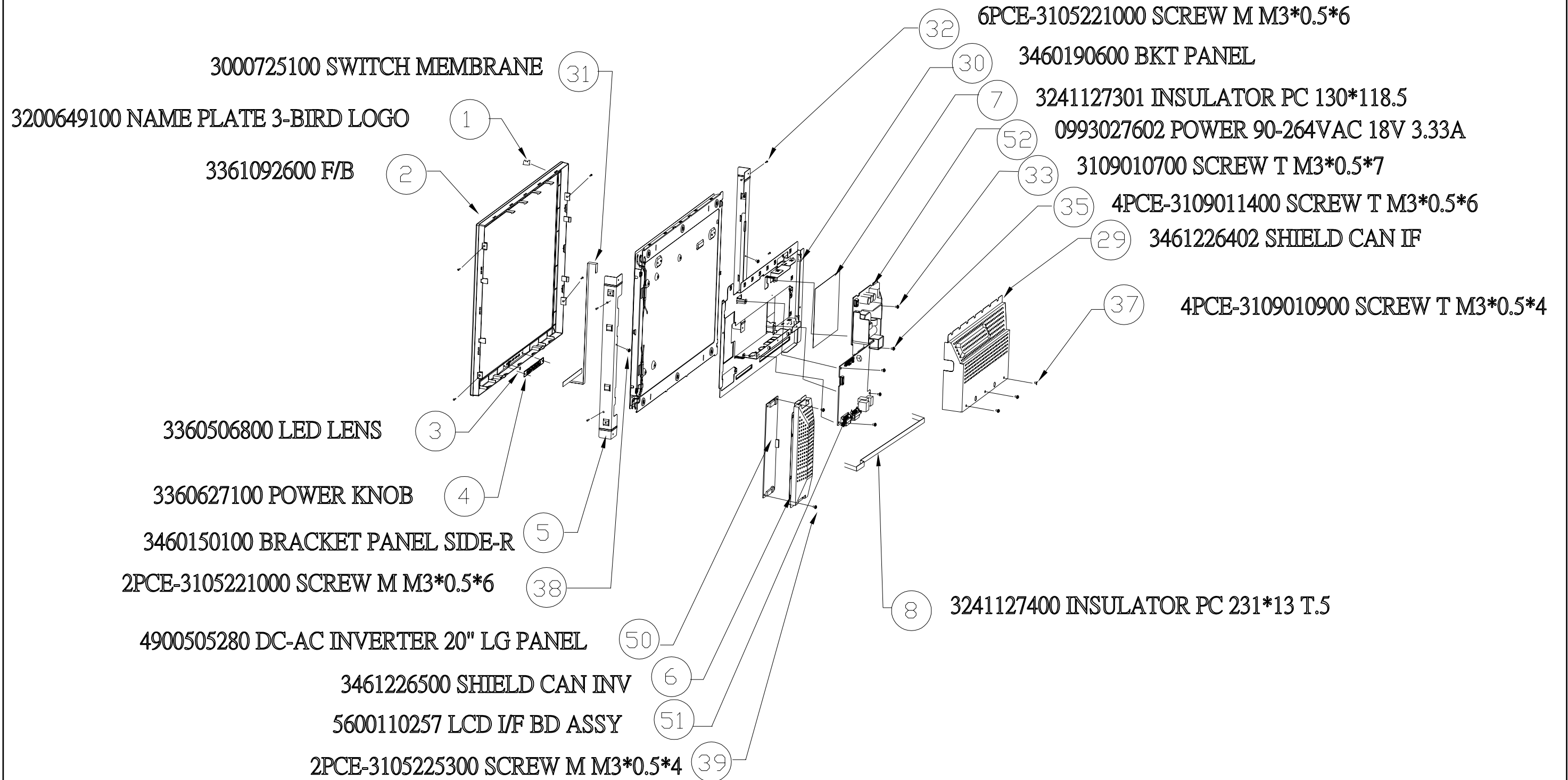
Item	ViewSonic P/N	Ref. P/N	Description	Location	Q'ty
79	E-R-0405-6685	343103100	RES CH 1/8W 10K J 0805	R613,R627	2
80	E-R-0405-6685	343103300	RES CH 1/10W 10K J 0603	R256,R257,R262,R274,R275,R278,R281,R406 .R443,R444,R445,R446,R447,R450,R614,R61 5,R628,R629,R635	19
81	#N/A	343151300	RES CH 1/10W 150 J 0603	R604,R605,R606	3
82	#N/A	343220100	RES CH 1/8W 22 J 0805	R271	1
83	E-R-0405-7042	343220300	RES CH 1/10W 22 J 0603	R423,R424,R425,R426,R646,R647,R648,R649	8
84	E-R-0405-6687	343222300	RES CH 1/10W 2.2K J 0603	R277,R611,R612,R623,R631	5
85	#N/A	343223300	RES CH 1/10W 22K J 0603	R283,R285	2
86	#N/A	343270300	RES CH 1/10W 27 J 0603	R430	1
87	#N/A	343332100	RES CH 1/8W 3.3K J 0805	R421	1
88	E-R-0405-7057	343332300	RES CH 1/10W 3.3K J 0603	R282,R284,R403,R404,R407,R408,R409,R410 .R413,R415,R427,R428,R453,R634	14
89	E-R-0405-7120	343391300	RES CH 1/10W 390 J 0603	R636	1
90	E-R-0405-7043	343392300	RES CH 1/10W 3.9K J 0603	R254	1
91	E-R-0405-6690	343470300	RES CH 1/10W 47 J 0603	R607,R610,R616,R617	4
92	E-R-0405-7033	343471300	RES CH 1/10W 470 J 0603	R401,R402	2
93	E-R-0405-7031	343472300	RES CH 1/10W 4.7K J 0603	R276,R448,R449,R637,R638,R639,R640,R641 .R642,R653	10
94	#N/A	343561100	RES CH 1/8W 560 J 0805	R405	1
95	#N/A	343561300	RES CH 1/10W 560 J 0603	R451,R452	2
96	E-R-0405-6691	343562300	RES CH 1/10W 5.6K J 0603	R255	1
97	#N/A	343681300	RES CH 1/10W 680 J 0603	R436,R437	2
98	E-R-0405-6693	343750100	RES CH 1/8W 75 J 0805	R601,R602,R603,R624,R625,R626	6
99	#N/A	343821100	RES CH 1/8W 820 J 0805	R267	1
100	#N/A	619900305	RES ARRAY 1/16W 47 J 8P4R 1206	RP401,RP402,RP403,RP404,RP405,RP406,RP 407,RP408,RP409,RP410,RP411,RP412,RP60 1,RP602,RP603,RP604,RP605,RP606,RP607, RP608,RP609,RP610,RP611,RP612,RP613,RP 614,RP615,RP616,RP617,RP618,RP619,RP62 0,RP621,RP622,RP623,RP624,RP625	37
101	#N/A	730060412	CRYSTAL 14.318MHZ 30PPM 30PF 49US	X401	1
102	#N/A	920990061	VOLTAGE SUPPRESSOR 5V 10P M 0603	VA401,VA402,VA403,VA404,VA405,VA605, VA606,VA607,VA608,VA613,VA617	11
103	#N/A	149024701233	CAP AL CP 6.3V 47U M 5*5.4	C269,C272,C630	3
104	#N/A	149101021533	CAP AL CP 10V 1KU M 10*10	C263	1
105	E-C-0404-4854	149122201208	CAP AL CP 16V 22U M 5*5.5	C659	1
106	#N/A	149122211333	CAP AL CP 16V 220U M 6.3*7.7	C266,C280	2
107	#N/A	149144701433	CAP AL CP 25V 47U M 8*5.4	C275,C279,C428	3
108	#N/A	149144711533	CAP AL CP 25V 470U M 10*10	C260,C262	2
109	#N/A	149161081103	CAP AL CP 50V 1U M 4*5.7	C264,C273	2
110	#N/A	1511512000	CAP MC CP 50V 18P J C0G 0603	C401,C402	2
111	E-C-0404-4878	1511514000	CAP MC CP 50V 22P J C0G 0603	C403,C605,C606,C609,C614	5
112	E-C-0404-4876	1512445000	CAP MC CP 50V 1KP K X7R 0603	C255,C258,C601,C613	4
113	#N/A	1512448000	CAP MC CP 50V 3.9KP K X7R 0603	C633	1
114	#N/A	1517654000	CAP MC CP 50V .01U Z Y5V 0603	C254	1
115	#N/A	1517657000	CAP MC CP 50V .047U Z Y5V 0603	C602,C603,C604,C610,C611,C612	6
116	E-C-0404-4497	1517658000	CAP MC CP 50V .1U Z Y5V 0603	C251,C259,C265,C267,C268,C270,C271,C276 .C277,C278,C404,C405,C406,C407,C408,C40 9,C410,C411,C412,C413,C414,C415,C416,C4 17,C418,C419,C420,C421,C422,C423,C424,C 425,C426,C427,C501,C502,C503,C504,C505, C506,C507,C508,C509,C510,C607,C608,C615 .C616,C617,C618,C619,C620,C621,C622,C62 3,C624,C625,C626,C627,C628,C629,C631,C6 32,C635,C636,C637,C638,C639,C640,C641,C 642,C643,C644,C645,C646,C647,C648,C649, C650,C651,C658,C664,C665,C675	84
117	#N/A	1517690000	CAP MC CP 50V .039U Z Y5V 0603	C634	1
118	#N/A	1557667100	CAP MC CP 25V 1U Z Y5V 0805	C253,C274	2
119	#N/A	15A7691100	CAP MC CP 10V 10U Z Y5V 0805	C281,C282,C283,C284,C285,C286,C287,C676 .C677,C678,C679	11
120	#N/A	202351580023	DIO SBD 5A 40V DO-201AD	D252	1
121	#N/A	203812520836	DIO ZEN 0.5W 3.32-3.53V LLDS(MINIM	D401,D603,D604,D605,D606,D609	6
122	#N/A	203812540236	DIO ZEN 0.5W 4.94-5.20V LLDS(MINIM	D602,D608	2
123	#N/A	203812670236	DIO ZEN 0.5W 16.82-17.7V LLDS(MINI	D253	1
124	E-D-0403-2135	204520700307	DIO SW 0.215A 75V SOT-23	D601,D607	2
125	E-Q-0402-1087	210522000405	TR 40V 0.2A SOT-23 100-300	Q252,Q259,Q260,Q261,Q262	5
126	E-Q-0402-7019	210522000505	TR 40V 0.6A SOT-23 80	Q256	1
127	#N/A	211522000205	TR -40V -0.2A SOT-23 100-300	Q401,Q402	2
128	E-Q-0402-7018	211522000405	TR -40V -0.6A SOT-23 100	Q257	1
129	#N/A	243502600010	FET -55V -11A 0.175ohm TO-252AA	Q258	1
130	E-Q-0402-1552	243601100031	FET -30V -8.0A 0.02OHM LL SO-8	Q263	1
131	E-IC-0401-2925	2500058010	IC REGU LDO 0.8A 3.3V SOT-223	IC254	1
132	#N/A	2500058037	IC REGU LDO 0.8A 3.3V SOT-223	IC253,IC254	1
133	#N/A	2500082637	IC REGU LDO 2.5V 5A TO-252	IC252	1
134	#N/A	2500088136	IC VOL DETECTOR 4.4V SOT-23	IC402	1
135	#N/A	2500224136	IC REGU 3.3V 0.4A SOT-89	IC255	1

Item	ViewSonic P/N	Ref. P/N	Description	Location	Q'ty
136	#N/A	2510019129	IC PWM SOP-16P	IC251	1
137	#N/A	2510406024	IC SW-CAP(10UF) VOLT CONVERTER SO-	IC612	1
138	#N/A	2530108343	IC TRIPLE VIDEO BUFFER G=+1 TSSOP-	IC610	1
139	#N/A	2530147512	IC PANEL-LINK RECEIVER TQFP-100P	IC609	1
140	#N/A	2530207213	IC IMAGE PROCESSOR PBGA-256B	IC401	1
141	#N/A	2530208043	IC 205MSPS ANALOG INTERFACE MQFP-1	IC608	1
142	#N/A	2540170221	IC LVDS I/F TSSOP-56P	IC501,IC502	2
143	#N/A	2600062607	IC OCTAL BUFFER 3-S SSOP-20P	IC405	1
144	#N/A	2600071007	IC ANALOG CMOS SO-14PIN	IC603	1
145	#N/A	2600088009	IC HEX INVERTER SOIC-14	IC602,IC607	2
146	#N/A	2610015107	IC 2 CHANNEL ANALOGUE SO16	IC604	1
147	E-IC-0401-2942	2610049742	IC CMOS 2K EEPROM SOIC-8P	IC601,IC605,IC606	3
148	E-IC-0401-1834	2610188137	IC EEPROM 256*8BIT SOIC-8PIN	IC403	1
149	E-IC-0401-3984	2641109302	IC 2610501923+5015013601 ASSY	IC404	1
150	#N/A	2816721510	CHOKESMT 10uH K	L254	1
151	#N/A	2816727480	CHOKESMT 22uH M 3.6A	L253	1
152	#N/A	2921095612	BEAD CH 100MHZ 60 OHM 0.3A 0603	FB601	1
153	#N/A	2921113212	BEAD CH 100MHZ 120 OHM 4A 1206	FB251,FB252,FB255,FB257,FB258,FB259,FB260,FB261,FB262,FB401,FB602	11
154	#N/A	2970036605	PWB M0 L4 FR-4 170*119 (I/F BD) L2		1
155	#N/A	3000750026	SWITCH ROLL BALL 4P P2.54		1
156	#N/A	3070337534	HEADER NY66 94V0 7P P2.0 R BROWN	CN252	1
157	#N/A	3071400334	HEADER NY66 94V0 4P P2.5 R	CN251	1
158	#N/A	3075308757	CONN D-SUB 15P R/A PC99 W/O SCREW	CN601	1
159	#N/A	3075316357	CONN DVI-I 29P P1.905 R	CN602	1
160	#N/A	3075415766	CONN FFC/FPC BOTTOM 30P P1.0 SMT	CN501	1
161	#N/A	3075415866	CONN FFC/FPC BOTTOM 8P P1.0 SMT	CN402	1
162	M-LB-0813-0913	3202005900	LABEL SERIAL 42*11 SONY	FOR STICK ON I/F BD	1
163	M-LB-0813-0914	3202009100	LABEL REISTRATION 40*16	STICK ON I/F BD	1
164	M-LB-0813-0915	3202215900	LABEL MCU 11*11 POLYESTER 50#	STICK ON IC301	0.125

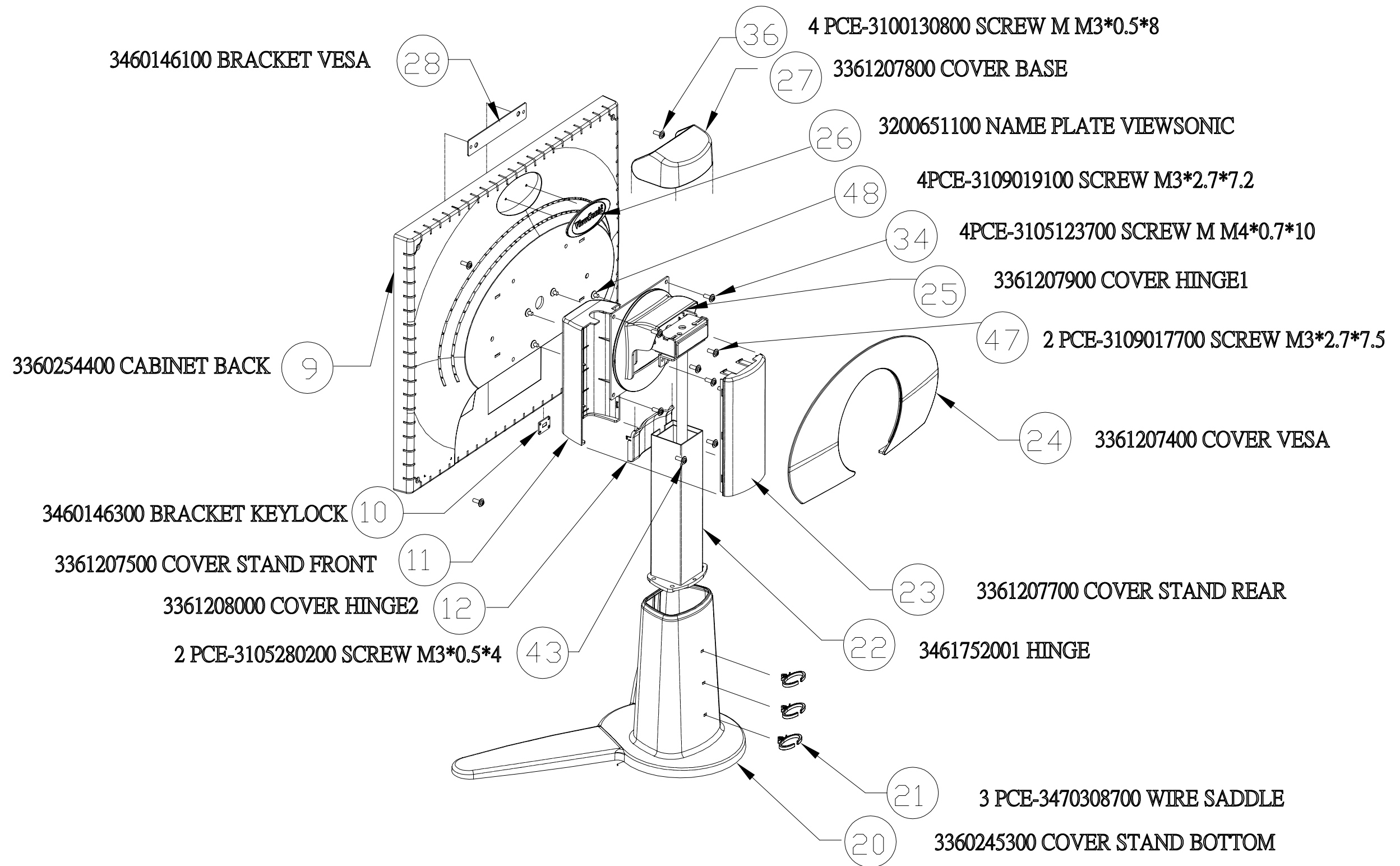
8. Exploded Diagram And Spare Parts List



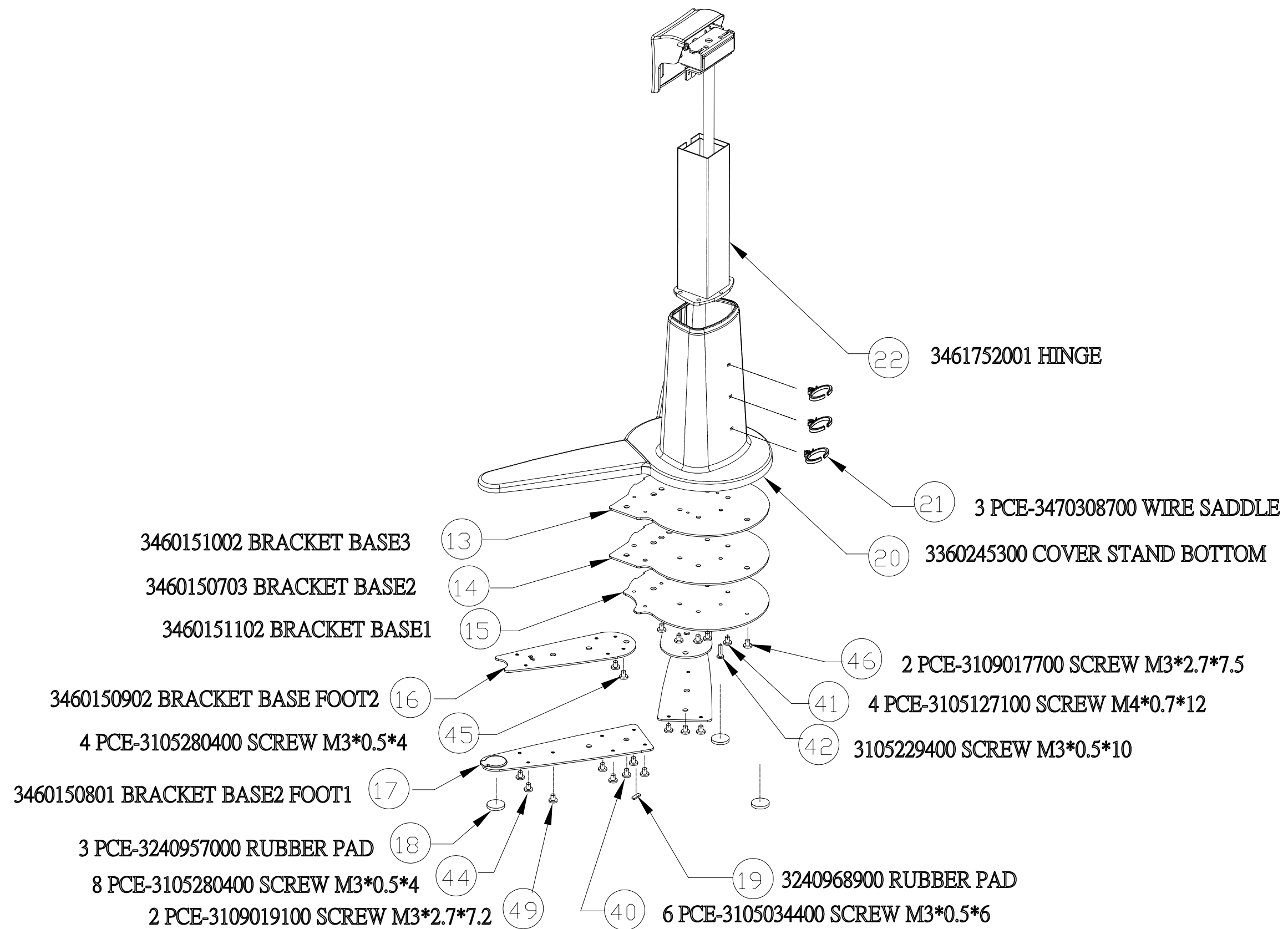
Mechanical Front bezel Assembly for VP2000s



Mechanical Back Cabinet Assembly for VP2000s



Mechanical Stand Assembly for VP2000s

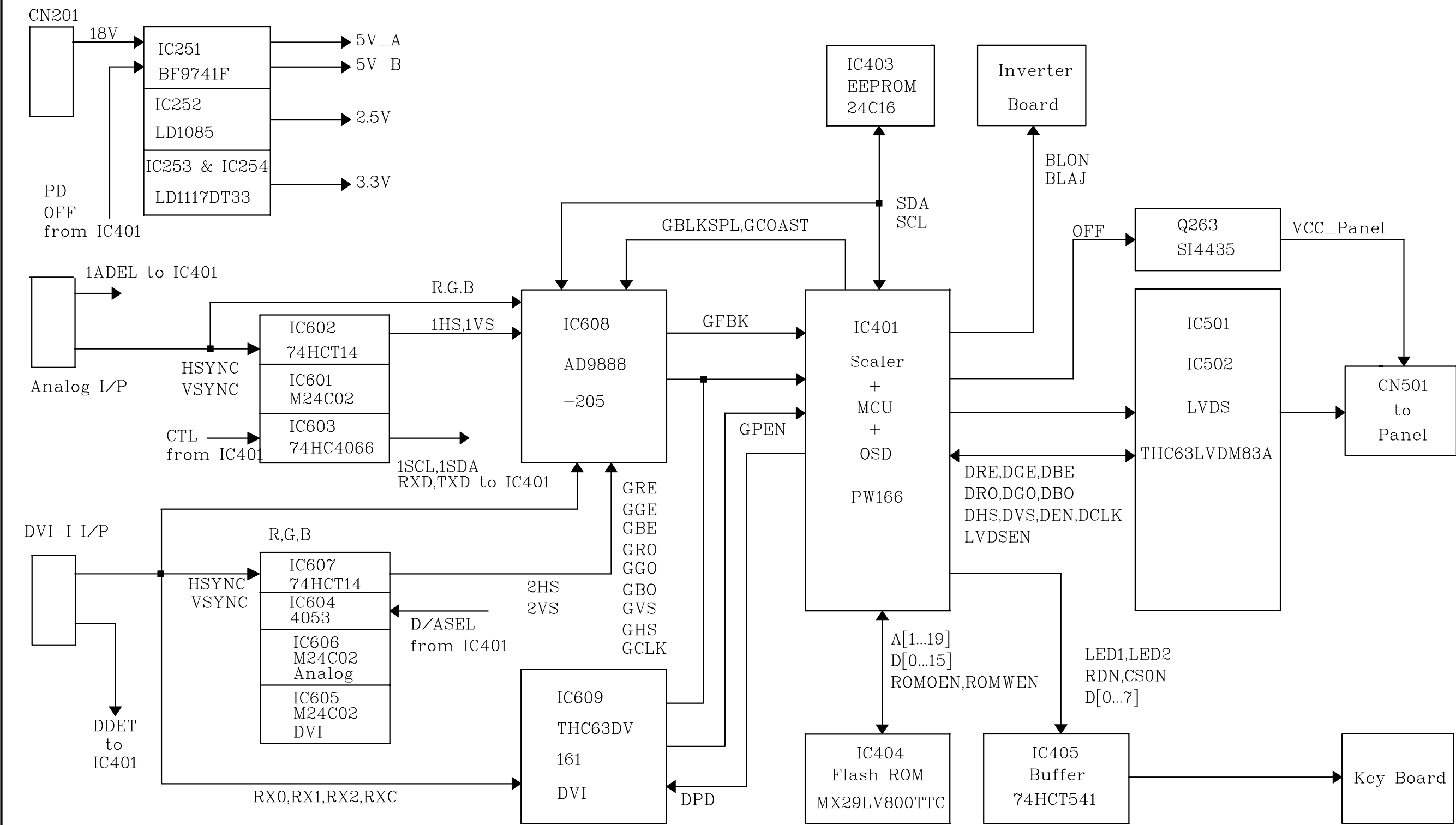


VP2000s-1 Exploded Part List

VP2000s-1 Exploded Part List Rev 1a (Initial)

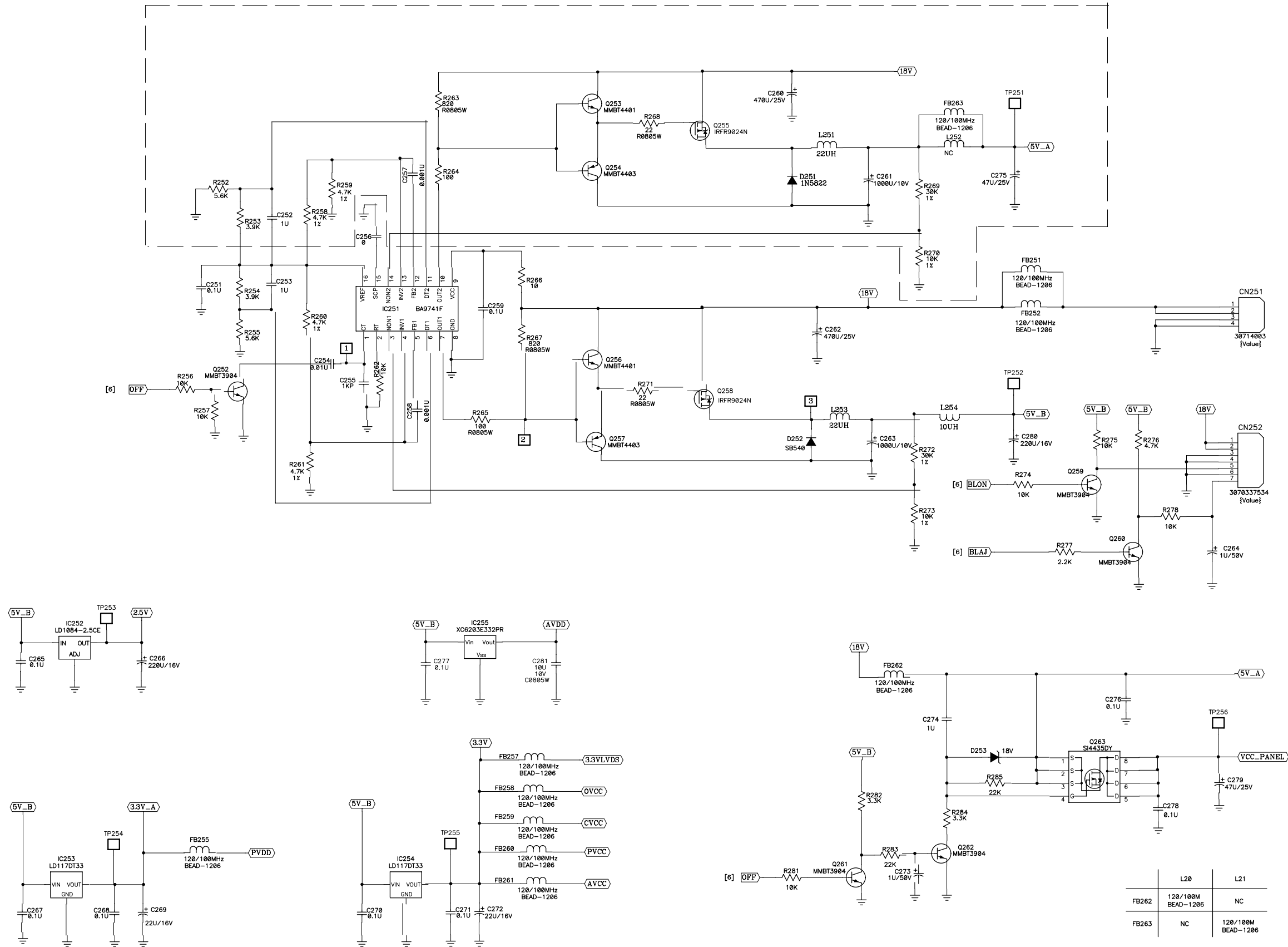
Item	ViewSonic P/N	ReferenceNumber	Description	QTY
1	M-MS-0808-8556	3200649100	NAME PLATE ABS 94HB VIEWSONIC 82.83*34.9	1
2	C-FP-0301-1024	3361092600	F/B ABS	1
3	M-MS-0808-8559	3360506800	LED LENS ABS 1865-12 S8LRB1LS	1
4	PL-NB-0707-1075	3360627100	POWER KNOB POM M270 MIDNIGHT GRAY	1
5	M-MS-0808-8630	3460150100	BRACKET PANEL SIDE-R SECC 325*30*25 T.8	1
	M-MS-0808-8631	3460150200	BRACKET PANEL SIDE-L SECC 325*30*25 T.8	1
6	M-MS-0808-8638	3461226500	SHIELD CAN INV SPTH 202*83.3*38.1 T.3	1
7	M-MS-0808-0016	3241127301	INSULATOR PC 130*118.5 T.5	1
8	M-MS-0808-8627	3241127400	INSULATOR PC 231*13 T.5	1
9	C-BC-0302-0627	3360254400	CABINET BACK ABS 41 S0LRA1AT VP2000S	1
10	M-MS-0808-8563	3460146300	BRACKET KEYLOCK SECC 20.4*16.45*4.9 T.6	1
11	M-CV-0830-2459	3361207500	COVER STAND FRONT ABS	1
12	M-CV-0830-2464	3361208000	COVER HINGE2 ABS	1
13	M-MS-0808-9854	3460151002	BRACKET BASE3 SECC OD139.01*163.3 T2	1
14	M-MS-0808-9855	3460150703	BRACKET BASE2 SECC OD139*163.3 T2	1
15	M-MS-0808-9856	3460151102	BRACKET BASE1 SECC 164*139 T2	1
16	M-MS-0808-9857	3460150902	BRACKET BASE FOOT2 SECC 159.8*29.1 T2	1
17	M-MS-0808-8633	3460150801	BRACKET BASE2 FOOT1 SECC OD182*59.9 T2	1
18	PL-PD-0714-0100	3240957000	RUBBER PAD OD20 T4 BLACK	3
19	PL-PD-0714-0101	3240968900	RUBBER PAD 20*20 T3 BLK	1
20	M-CV-0830-2472	3360245300	COVER STAND BOTTOM	1
21	M-WR-0828-0739	3470308700	WIRE SADDLE NYLON66 COLOR41	3
22	M-MS-0808-8572	3461752001	HINGE SECC 312.5*51.82 L18JBW05ABB	1
23	M-CV-0830-2461	3361207700	COVER STAND REAR ABS	1
24	M-CV-0830-2458	3361207400	COVER VESA ABS 41	1
25	M-CV-0830-2463	3361207900	COVER HINGE1 ABS	1
26	M-MS-0808-8758	3200651100	NAME PLATE VIEWSONIC ABS 82.83*34.98	1
27	M-CV-0830-2462	3361207800	COVER BASE ABS S8LBB1LS	1
28	M-MS-0808-8561	3460146100	BRACKET VESA SECC 110*20 T1	1
29	M-MS-0808-8637	3461226402	SHIELD CAN IF SPTH 299*150*41.5 T.3	1
30	M-BK-0805-0113	3460190600	BRACKET PANEL SECC 433.4*216.3*42 T.8 LG	1
31	B-KB-0207-0034	3000725100	SWITCH MEMBRANE PET 100*9 VP181-2	1
32	M-SCW-0824-0776	3105221000	SCREW M M3*0.5*6 FF C S18C ZN	6
33	M-SCW-0824-0784	3109010700	SCREW T M3*0.5*7 PAN C S+P S20	1
34	M-SCW-0824-0775	3105123700	SCREW M M4*0.7*10 FF C S18C ZN	4
35	M-SCW-0824-0413	3109011400	SCREW T M3*0.5*6 BIND C S18C ZN	4
36	M-SCW-0824-0772	3100130800	SCREW M M3*0.5*8 FPH C SC20C ZN	4
37	M-SCW-0824-0732	3109010900	SCREW T M3*0.5*4 BIND C S18C ZN	4
38	M-SCW-0824-0776	3105221000	SCREW M M3*0.5*6 FF C S18C ZN	2
39	M-SCW-0824-0777	3105225300	SCREW M M3*0.5*4 FF C S18C ZN	2
40	M-SCW-0824-0773	3105034400	SCREW M M3*0.5*6 FLAT C S20C Z	6
41	M-SCW-0824-0781	3105127100	SCREW M M4*0.7*12 FF C S18C ZN	4
42	M-SCW-0824-0778	3105229400	SCREW M M3*0.5*10 FF C S18C ZN	1
43	M-SCW-0824-0782	3105280200	SCREW M M3*0.5*4 FF C S18C ZN	2
44	M-SCW-0824-0783	3105280400	SCREW M M3*0.5*4 FLAT C S20C Z	8
45	M-SCW-0824-0783	3105280400	SCREW M M3*0.5*4 FLAT C S20C Z	4
46	M-SCW-0824-0779	3109017700	SCREW T M3*2.7*7.5 FF C S18C Z	2
47	M-SCW-0824-0779	3109017700	SCREW T M3*2.7*7.5 FF C S18C Z	2
48	M-SCW-0824-0780	3109019100	SCREW T M3*2.7*7.2 FLAT C S18C	4
49	M-SCW-0824-0780	3109019100	SCREW T M3*2.7*7.2 FLAT C S18C	2
50	B-SB-0221-0529	4900505280	DC-AC INVERTER 20" LG PANEL	1
51	B-IF-0222-0063	5600110257	LCD I/F BD ASSY	1
52	B-PS-0204-0060	993027602	POWER 90-264VAC 18V 3.33A	1

VP201 LCD MONITOR BLOCK DIAGRAM

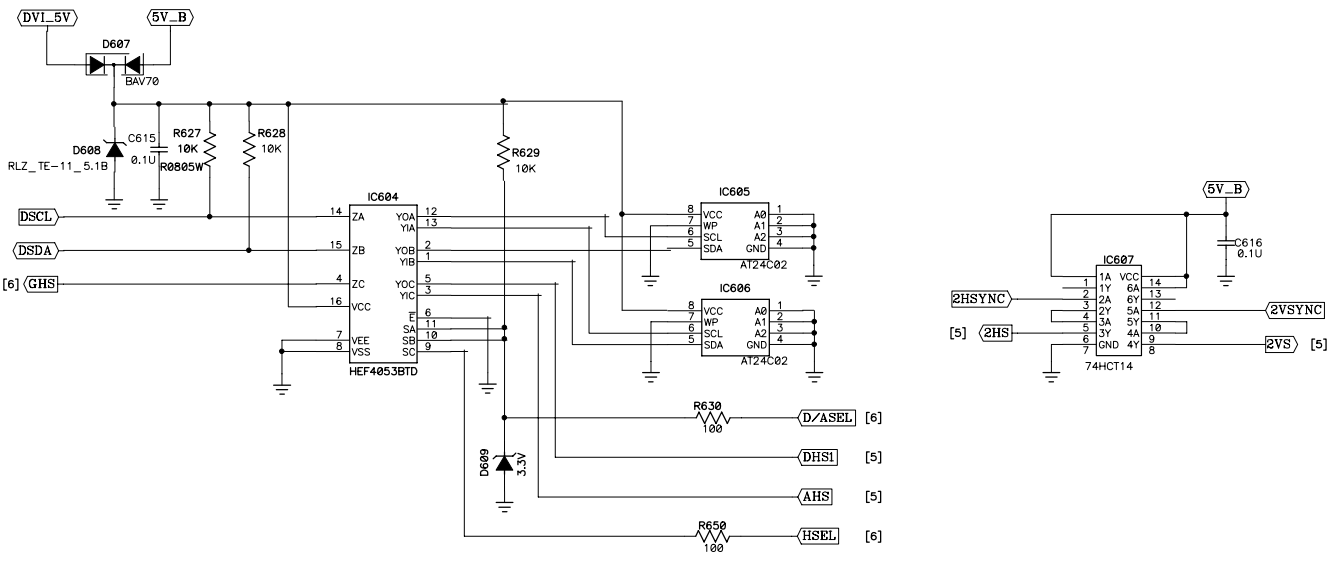
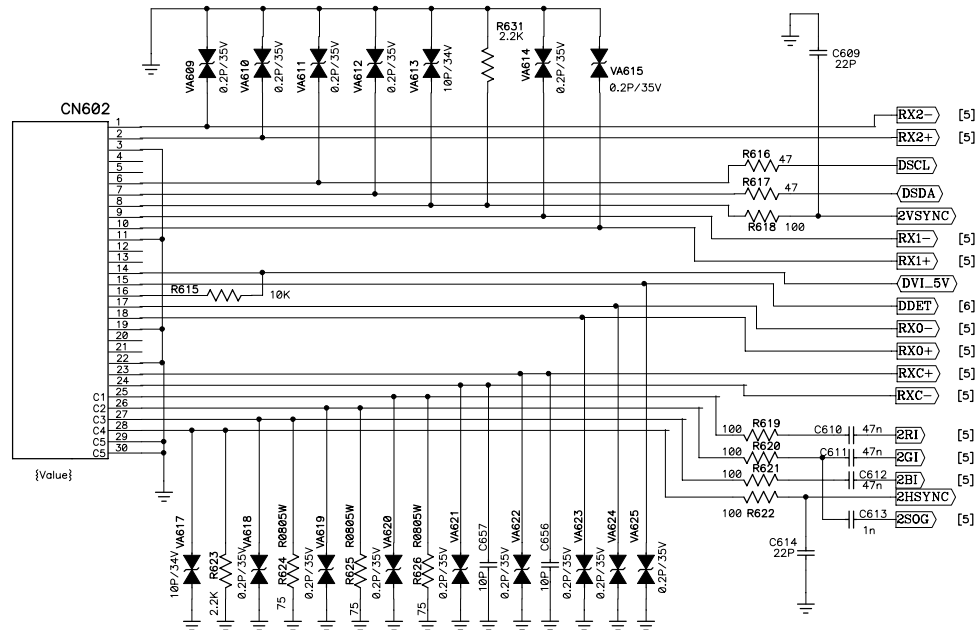
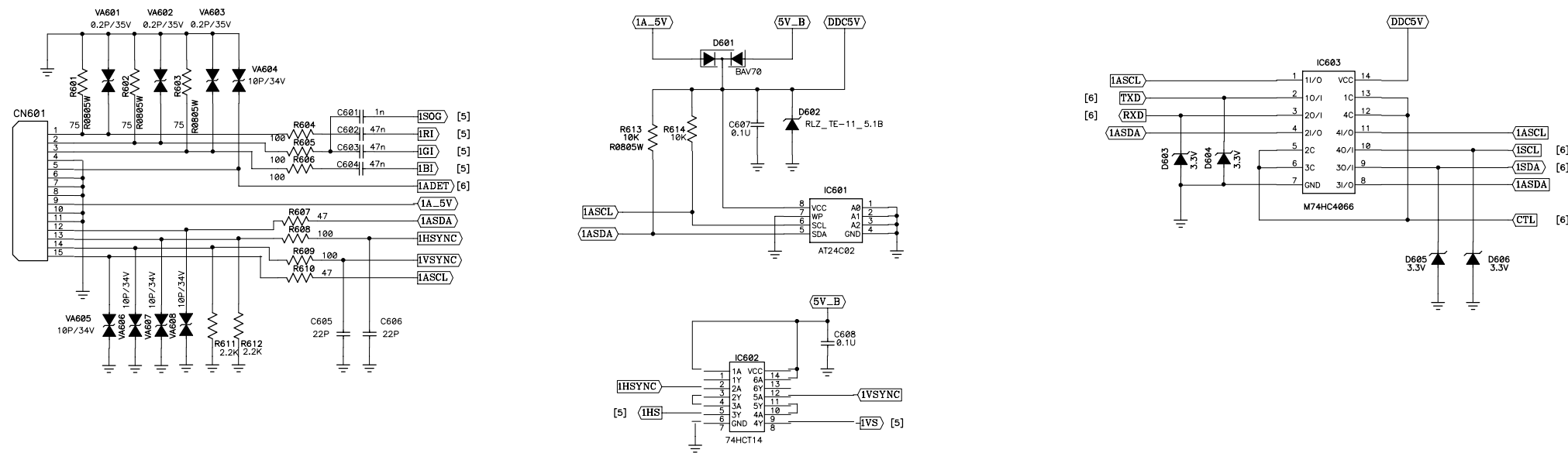


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DESCRIPTION: SCHEMATIC OF LCD MONITOR			04-15-2003	04-15-2003			

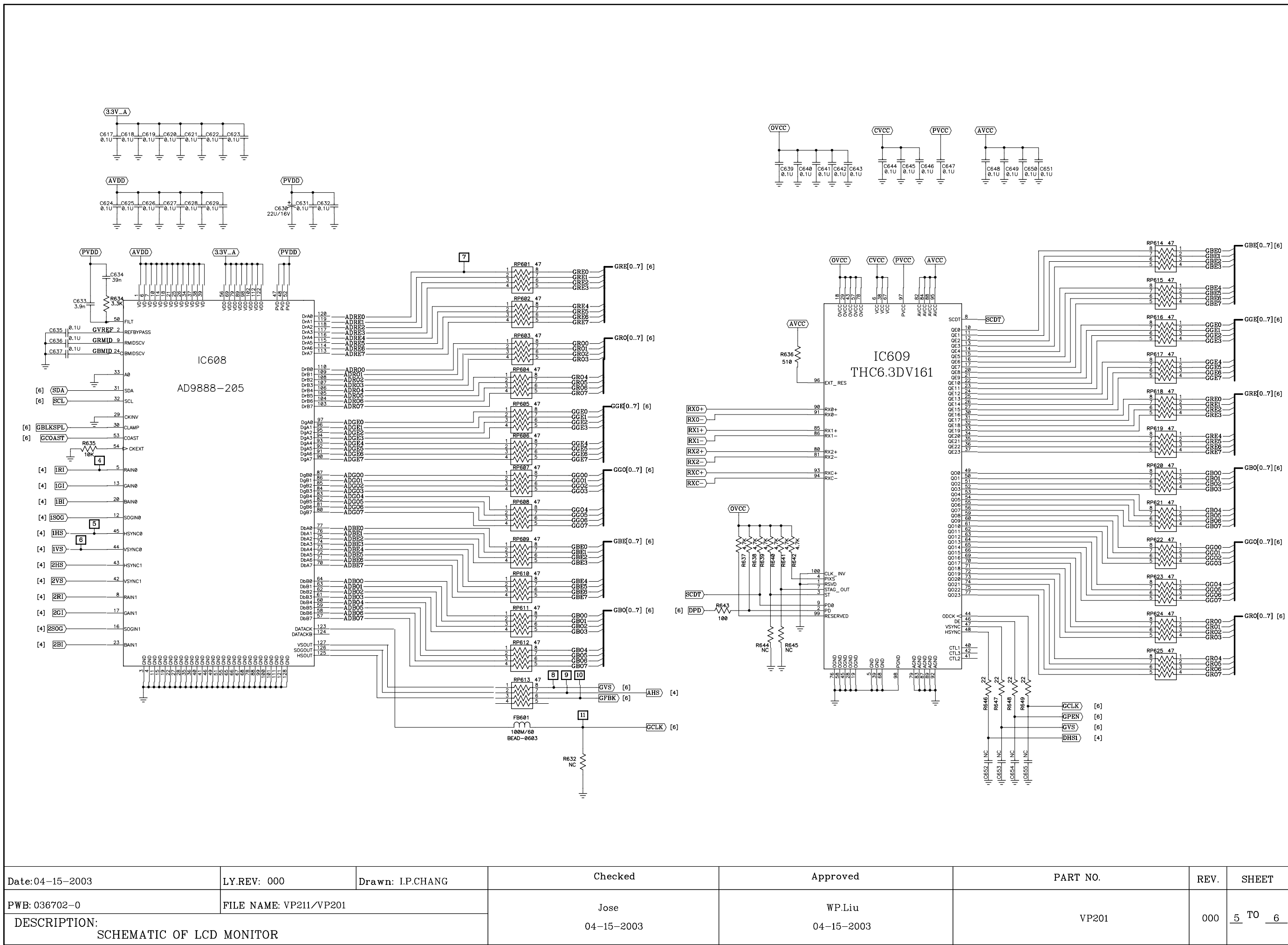
10. Schematic Diagrams

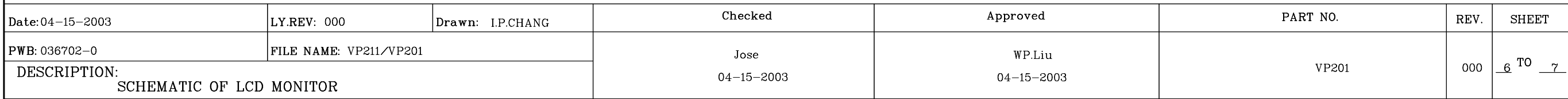


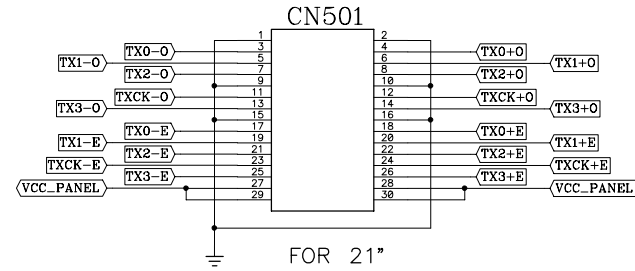
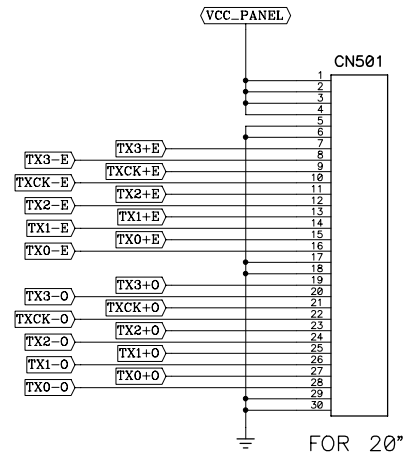
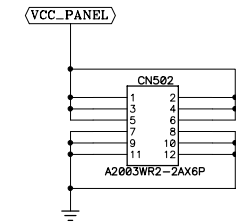
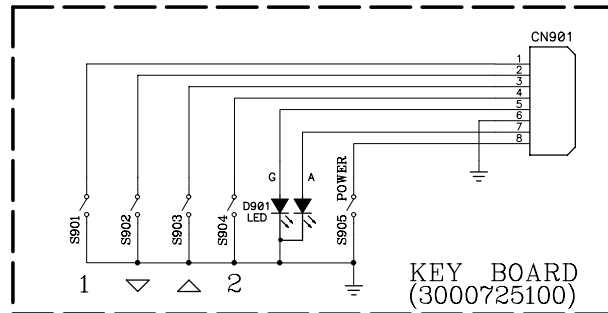
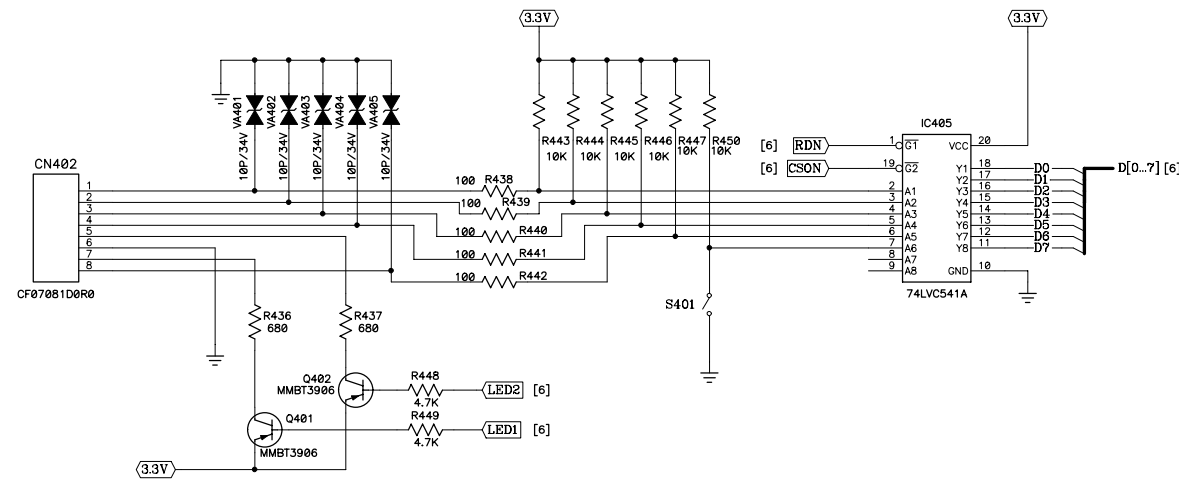
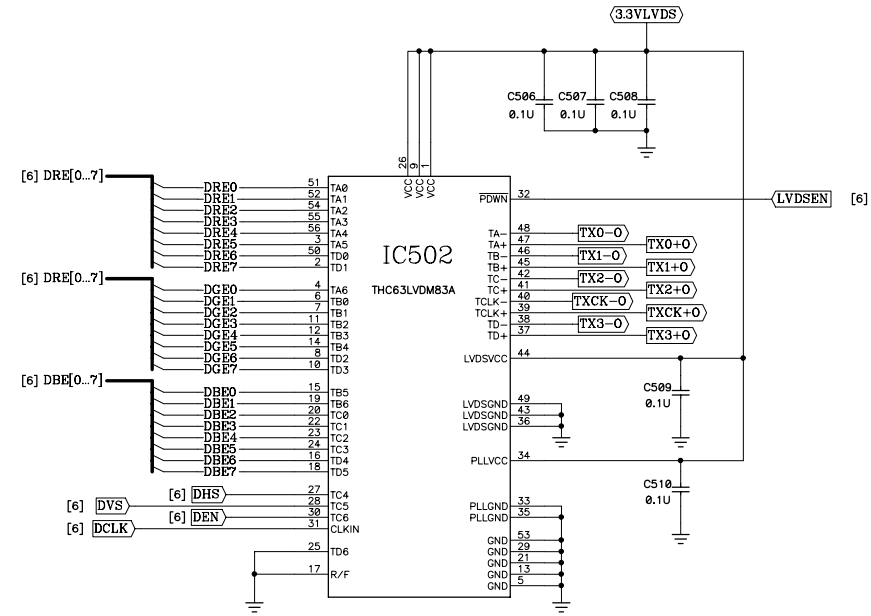
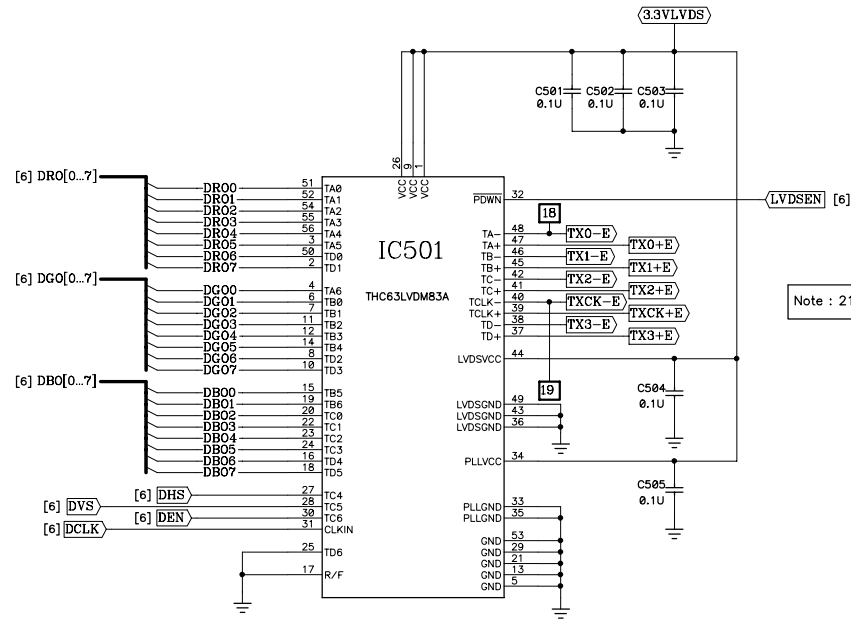
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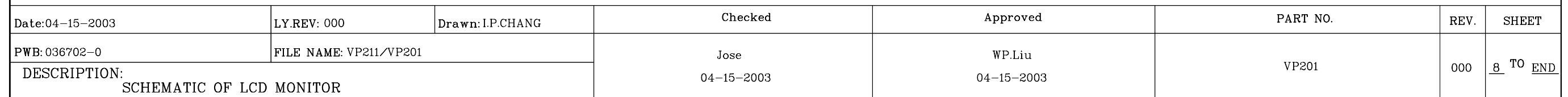
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DESCRIPTION: SCHEMATIC OF LCD MONITOR			04-15-2003	04-15-2003			



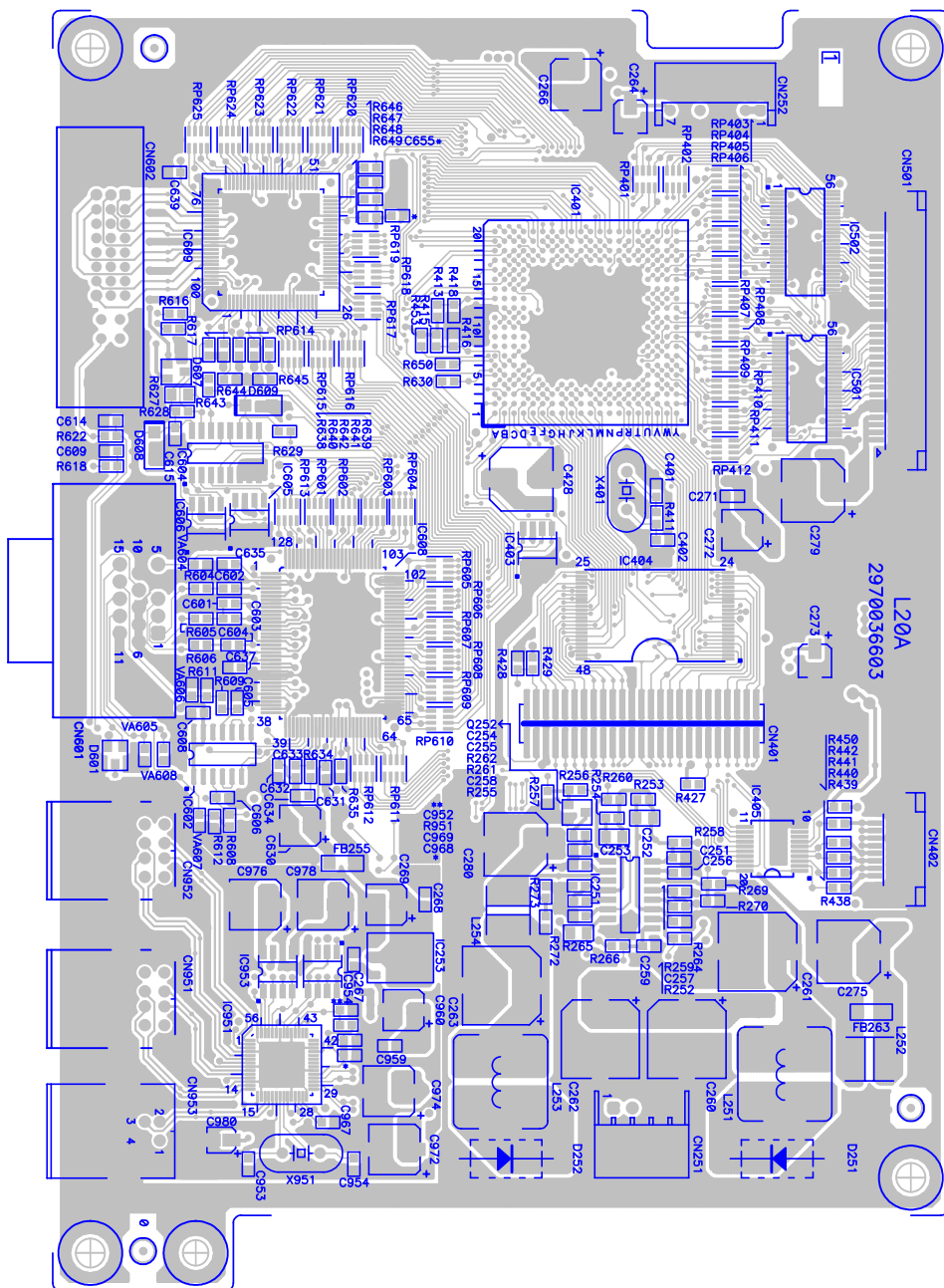




Date:04-15-2003	LY.REV:000	Drawn: I.P.CHANG	Checked	Approved	PART NO.	REV.	SHEET
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DESCRIPTION: SCHEMATIC OF LCD MONITOR			04-15-2003	04-15-2003			



11. PCB Layout Diagrams



****Reader's Response****

Dear Readers:

Thank you in advance for your feedback on our Service Manual, which allows continuous improvement of our products. We would appreciate your completion of the Assessment Matrix below, for return to ViewSonic Corporation.

Assessment

A. What do you think about the content after reading **VP2000s** Service Manual?

<i>Unit</i>	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Bad</i>
1. Precautions And Safety Notices				
2. Specification				
3. Front Panel Function Control Description				
4. Circuit Description				
5. Adjusting Procedure				
6. Trouble Shooting Flow Chart				
7. Recommended Spare Parts List				
8. Exploded Diagram and Spare Parts List				
9. Block Diagram				
10. Schematic Diagrams				
11. PCB Layout Diagrams				

B. Are you satisfied with the **VP2000s** service manual?

<i>Item</i>	<i>Excellent</i>	<i>Good</i>	<i>Fair</i>	<i>Bad</i>
1. Service Manual Content				
2. Service Manual Layout				
3. The form and listing				

C. Do you have any other opinion or suggestion about this service manual?

Reader's basic data:

Name:		Title:	
Company:			
Add.:			
Tel:		Fax:	
E-mail:			

After completing this form, please return it to ViewSonic Quality Assurance in the USA at facsimile 1-909-839-7943. You may also e-mail any suggestions to the Director, Quality Systems & Processes (marc.maupin@viewsonic.com)